

COMPUTERWORLD

Switched management help en route

By Stephen P. Klett Jr.
BIRMINGHAM

Cabletron Systems, Inc. last week said it expects to be the first internetworking vendor to provide end-to-end management in switched LAN and ATM environments.

That will happen when it ships its Automated Connection Management Services in the third quarter of next year.

The emergence of LAN and Asynchronous Transfer Mode switching is driving a transition from bridged/routed networks to switched internetworks.

While switches offer users higher bandwidth and data rates, the software to manage them is missing in action.

Industry logging

"The industry is immature in its ability to manage a [switched] type of environment," said Blair Sanders, a senior member of the technical staff at Texas Instruments, Inc. in Plano.

Currently in alpha testing at Cabletron's Network Management division here, the nonproprietary ACSM will provide automated connection management between individual nodes. It will allow users to set up virtual LANs across multiple switches from multiple vendors.

Cabletron, page 139

Cairo falters again

Microsoft mulls interim Windows NT 3.5 version with 'Indy' interface

By Stuart J. Johnson and Ed Seawall
LAS VEGAS

Microsoft Corp. executives last week acknowledged that delivery of Cairo, the next major release of Windows NT, will slip again, this time into 1996. They also indicated that an interim version of NT 3.5 with the Windows 95 look and feel—a graphical user interface called Indy—is under consideration.

Microsoft officials said the idea of an interim version of NT 3.5 may never see the light of day, although they admitted that the company already has a prototype of Indy running in-house.

"We're looking at that and how easy that would be to do. It'd be nice if the [Windows 95]

The race to Indy

User reaction to putting the Indy interface into Windows NT 3.5 runs the gamut:

PRO Cuts user training costs
Cuts corporate development costs

CON Adds the burden of another upgrade

shell was there [on Windows NT 3.5]," said Bill Gates, Microsoft chairman and chief executive officer. "We're seeing if there's an effective way we can get that out before Cairo, but we're not in a position to make a commitment on that."

Separately, Mike Maples, Microsoft's executive vice president of products, acknowledged that the schedule for Cairo has slipped, this time to "sometime in 1996."

Cairo will feature the Windows 95 user interface and an object-oriented file system. It was initially scheduled to ship in the first half of 1995, then postponed to the second half.

A version of NT with Indy may not be a done deal, but eager users generally hailed the Cairo, page 139

High-tech execs, IS shops cheer GOP takeover, plans

By Gary H. Anthes
WASHINGTON

The stunning Republican takeover of Congress will mean a greater emphasis on deficit reduction, free trade and deregulation—just the kind of policies the high-tech business community likes to see.

Yet the free-marketers are also likely to get the very Clinton administration initiatives that are pumping millions of dollars into

the research and development of advanced computing and communications technologies.

As for corporate information systems managers, Computerworld found in a survey of 100 IS managers last week that they like the Grand Old Party just fine (see chart at right).

"The Republican Party will continue to aggressively push forward technology issues in government," said Eric Singleton, director of IS GOP, page 12

Trumpeting victory

Do you think the resurgence of the Republican Party is likely to be good or bad for the high-tech community?



Backstabbing and betrayal can quickly dominate IS teams.



Family Feud

Managers must learn to mediate this war of raw nerves and revenge.

See Management, page 85.

Alliance raises hopes, red flags

Sybase/Powersoft union sparks worries about product futures

By Kim S. Nash
and Rosemary Caffeso

Sybase, Inc.'s \$504 million acquisition of Powersoft Corp. raised as many hopes as worries among users last week.

While joint customers said they hoped the partnership would deliver a broad scale of integrated tools and database products, other users said they doubted Powersoft's flagship product, PowerBuilder, would remain database-neutral once Sybase takes over.



Sybase CEO and President Mark Hoffman: The companies have worked in joint development for four years and share a vision "to interoperate with other software."

And the deal, which is expected to be approved by government officials and shareholders by March, effectively spells doom for Build Momentum. Sybase's troubled start at creating a graphical development tool, users and analysts said.

A tough challenge will be to maintain the Powersoft magic.

"Powersoft had tremendous presence and excitement around it," noted Brent Williams, an analyst at Gartner Group, Inc. "But now it's gone from being an upstart that challenged Microsoft to a minority revenue-maker in a large, boring database company."

Alliance, page 15

Powersoft will be the fourth development tool company Sybase has acquired since 1990. The others are dBase Software, Inc. in 1990, dBase Technology, Inc. in 1991 and dBase Technology, Inc. in 1992.

NEWSDEP

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ON-LINE INFO

TECHNICAL TROUBLESHOOTING

Systems operators from Gupta and Powersoft reveal the secrets to getting your system problems addressed on CompuServe.
See In Depth, page 109.



JOB SEARCHING

On-line resources put you in touch with job opportunities that conventional methods don't provide.
See Computer Careers, pages 116 and 117.

NEWS

■ Novell will offer multiprotocol routing capabilities over a wide-area network with its NetWare 4.1 release, due out next month. *Page 4*

■ Microsoft's Windows NT server software is beginning to nibble away at the Unix workstation and server markets. *Page 2*

■ A design change in the PowerPC 603 chip has pushed back the availability of Apple's PowerPC-based notebooks until mid-1995. *Page 6*

■ IBM is starting to deliver clustering technology for the AS/400, but full support for clusters will take two to three years. *Page 10*

■ AT&T and Lotus launch a handful of market trials for AT&T Network Notes, a wide-area communications network. *Page 14*

■ IBM announces its well-publicized Workgroup product line at Comdex. Other vendors try to show that they are on track to deliver applications for Windows 95 next year. *Pages 14 and 16*

■ Software tools vendor Gupta Corp. is in the throes of a costly midlife crisis. *Page 20*

■ Oracle has delayed systems management tools integrated with Hewlett-Packard's OpenView system until mid-1995. *Page 24*

■ The numbers of Internet access vendors and their offerings are booming, but watch for the inevitable shakeout. *Page 28*

■ The once-belaugered Sequoia turned down Digital but has signed deals with others to expand its business. *Page 28*

■ Start-up Wildfire has a big vision — and two dogs to help steady the ship. *Page 30*

DESKTOP COMPUTING

■ Add-on applications bring definition to increasingly generic application suites. *Page 39*

■ Vendors are building digital signal processing capabilities into CPU chips in the hopes of reducing costs of multimedia systems. *Page 39*

WORKGROUP COMPUTING

■ Competitors in the Windows NT backup market are waging war, as

shown by their Comdex introductions. *Page 49*

ENTERPRISE NETWORKING

■ Network and systems management vendors make lofty scalability promises, but users wonder why. *Page 57*

LAARGE SYSTEMS

■ Let the user beware: The major database players approach replication differently and to varying degrees. *Page 55*

APPLICATION DEVELOPMENT

■ Users see relief within reach as the Object Management Group closes in on an interoperability standard. *Page 73*

MANAGEMENT

■ Backstabbing and betrayal can quickly dominate IS teams. Managers must learn to mediate this war of raw nerves and revenge. *Page 85*

MARKETPLACE

■ Don't simply accept pass-through warranties from systems integrators, one legal expert says. Ask for more integrated coverage. *Page 125*

COMMENTARY

■ Charles Babcock looks forward to a time when relational really relates. *Page 6*

■ Bill Laberis says the government shouldn't make striving to be the best anything less than what it is: good for customers. *Page 34*

■ Michael Cohn says the date field challenge of the Year 2000 is nothing compared with the challenges IS has already dealt with. *Page 35*

■ Esther Dyson hopes the national information infrastructure is allowed to mature in a natural way. *Page 35*

■ Stan Schutt says Bill Gates may have missed some crucial first-grade lessons. *Page 49*

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Executive Briefing

Sybase's purchase of Powersoft raises both hopes and worries for users. Joint customers hope the partnership will deliver more integrated tools and database products, but other users doubt Powersoft's flagship, PowerBuilder, will remain database-neutral once Sybase takes over. The combined company may find that potential customers have already turned to other client/server vendors to get capabilities such as partitioning. *Cover 1*

Emphasis on deficit reduction, free trade and deregulation is the expected fallout from the Republican takeover of Congress, and that should please the high-tech business community. Yet the free-market-ers are also likely to gut the very Clinton administration initiatives that are pumping millions of dollars into the research and development of advanced technologies. *Computerworld* found that managers like the Grand Old Party. Out of 100 IS managers surveyed, 56% said the Republican takeover would be good for the high-tech community. *Cover 1*

The music stopped and IS executives scrambled to find a chair last week. High-ranking IS executives either joined or left a batch of companies, including Procter & Gamble, Xerox, Microsoft and Bell Atlantic. And the game of musical chairs has only just begun, according to recruiters and consultants, who predict more high-profile job-hopping among companies by top IS talent. *Page 8*. There is also a new breed of corporate chieftain, typified by Daniel G. Hoffman. He represents the new IS executives who are passionate about the impact that technology has made on their companies. *Page 8*

On site this week: Marin County sets up a countywide Internet system to connect local government, county and private organizations with any-to-any data links. *Page 57*. KPNG's groupware system helps the huge consulting and accounting firm work faster, but it doesn't use Notes. *Page 58*. Teleport Communications makes client/server work one decision at a time. *Page 68*. PNC Bank is using parallel processing to help it handle its expanding loan portfolio. *Page 65*

The 5th Wave by Rich Tennant



NT makes headway in Unix strongholds

By Jean S. Bozman

Like a child nibbling on a cookie, the Microsoft Corp. Windows NT 3.5 server software is taking small bites around the edges of the RISC market, which has traditionally been filled with Unix-based workstations and servers.

That was evident last week at Comdex/Fall '94 when Unix workstation and server vendors Motorola, NT 3.5 server software and Telling Science & Technology, Inc. announced support for NT on PowerPC-based systems.

Move over Unix

Although some vendors already sell Intel Corp.-based systems that run NT, the high-end RISC-based suppliers—including Motorola and Digital Equipment Corp.—are now providing NT platforms as well. Users want these RISC platforms to run engineering applications and database servers, both of which have

been Unix strongholds.

According to analysts, NT is making headway because of its two advantages: a lower start-up cost compared with RISC hardware and lower maintenance costs for users with just one set of NT source code.

"I think it would give us the flexibility of being able to run whatever application requirements are on a single machine," said Dennis Walsh, chief information officer at Entegy Corp., a New Orleans-based utility. The company has dozens of networked Unix servers and thousands of Windows PCs. Adding NT is a natural move for some RISC vendors, analysts said.

"If there's money to be made and

growth to be had in the NT market, they want a part of it," said Dan Kurnetelsky, research manager for Unix and advanced operating environments at International Data Corp. (IDC) in Framingham, Mass. IDC expects NT servers to move from their current fourth place to

No. 2 by 1998 (see chart).

Unix-to-NT software conversions are already under way among workstation application vendors such as Autodesk, Inc., particularly for engineering software, analysts said. Computer-aided design packages run on Intergraph Corp.'s Pentium-based NT servers, for example, and other vendors are porting software development tools and publishing software to NT.



NT will also gain strength as a database server for client-server applications in workgroups and departments. "That's going to be NT's initial beachhead," said Thomas Kechary, president of Summit Strategies, Inc. in Boston. "But the areas of replicated servers, management servers and enterprise servers will continue to be a stronghold for Unix."

Other Unix vendors are preparing to jump on the RISC/NT bandwagon but will go only if pushed because NT threatens their systems software, analysts said.

Some users are doubtful that the leading Unix vendors will ever fully support NT without being dragged kicking and screaming. Suppliers will "not risk their ability to gain proprietary advantage" by going with an operating system where they do not have control, said David Pensak, principal consultant for advanced computing technology at Du Pont Co. in Wilmington, Del.

IBM clarifies PowerPC strategies, direction

By Michael Fitzgerald

CONTINUED

Considering it won't ship until next spring, IBM's PowerPC system got a lot of attention at Comdex/Fall '94. In customer presentations and separate interviews, company officials made several surprising statements and clarified their PowerPC strategy.

Among the more illuminating pronouncements were the following:

■ IBM has no intention of developing a common operating system to run on the newly unified IBM/Apple Computer, Inc. PowerPC hardware platform, according to John Thompson, IBM senior vice president and head of IBM's PowerPC strategy.

■ Delays in OS/2 for the PowerPC did not cause IBM to hold back its PowerPC hardware until next year. ■ IBM has no interest in licensing Mac OS for the PowerPC from Apple, according to Richard Thoman, IBM senior vice president and general manager of its PC business.

Elsewhere, a published report last week said IBM would license the Mac OS, but IBM officials denied this saying they were not negotiating with Apple about licensing or bundling Mac OS.

Nobuo Mii, general manager of IBM's Personal Division, said that "the deal I might want to do is to be an agent [for Mac OS], not a licensee. A licensee means I can access source code, and I don't want to maintain the Mac OS."

Also, according to Thoman, delays in the development of human-centric technologies, such as the Charlie talking head and voice-driven interface [C.W. Nov. 14], were "the main reason" IBM did not ship its PowerPC systems in October. He added that OS/2 may not ship with the systems next spring, though its delivery will be "close enough."

IBM officials also said that testing needs and new products in the works delayed the delay of systems based on the new common hardware platform until 1996.

While the delay in shipping unified hardware has caused many analysts to say that the PowerPC partners are effectively ceding the market to Intel Corp., IBM executives naturally downplayed this battle.

"People want me to say which one will win, and what I think is they'll coexist for some time to come," Thoman said.

Still, IBM executives clearly expect to capitalize on Intel's late-decade move to the P7 chip, which is being codeveloped with Hewlett-Packard Co. IBM officials said today's PowerPC efforts will put them ahead in the RISC game.

Carl Everett, senior vice president of Intel's microprocessor group, disagreed, saying that "PowerPC gives a clear focus to software developers; the high-volume area is the Intel platform."

Everett added that the P7 will be binary compatible with P6, due out next year, which means the chip can run today's software without emulation.

Motorola to bundle PowerStack line with Microsoft products

By Stuart J. Johnston

DAVENPORT

In a move that may help Microsoft Corp. get yet another leg up on IBM, Motorola, Inc. last week announced it will ship its PowerStack line of PowerPC-based machines, bundled with Microsoft's Windows NT in the first quarter of next year.

Besides Windows NT Workstation 3.5 and NT Server 3.5, Motorola has agreed to bundle Microsoft's Office productivity

applications on some machines and has also acquired a license to bundle the BackOffice server suite, executives from Microsoft and Motorola said.

"I think you're going to see [NT] clearly being the best-selling operating system on Motorola platforms," said Edward F. Stasano, executive vice president of Motorola and general manager of Motorola Computer Group.

Weak response

Users were more ho-hum, expressing skepticism that the move will do much more than give them another set of options in a small but competitive marketplace.

"NT is already available on a number of RISC platforms like MIPS [Technology, Inc.'s] and [Digital's] Alpha, and it will be nice to see it on PowerPC, but I don't know if it changes anything right

away," said Jonathan Vaughn, vice president of applications systems technology at The Chase Manhattan Bank NA in New York.

"From a due diligence perspective, we'll take a look at it. There may be something applicable to what our offices out in the field might do, but, in general, it does not excite as a great deal," said Frank Petersmark, manager of technical services at Amerisure & Co. in Southfield, Mich.



Beta versions of Microsoft's Word and Excel running on a Motorola PowerPC system were demonstrated at the Comdex/Fall '94 trade show in Las Vegas last week.

Versions of NT Workstation and Server as well as the Office applications are currently scheduled to be available in the first quarter.

However, no date was given for availability of the BackOffice products, which include SQL Server, SNA Server, Systems Management Server and Microsoft Mail Server.

Senior editors Michael Fitzgerald and Ed Scanlon contributed to this story.

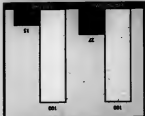
IBM's Richard Thoman said OS/2 may not ship with the PowerPC systems next spring.

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Wide-area routing coming to NetWare

By Suruchi Mohan

In an effort to make NetWare a truly enterprise-class platform, Novell, Inc. will support multiprotocol routing capabilities in the soon-to-be-released Version 4.1.

A beta tester at a major bank said last week that Novell will support the next release of the NetWare Multi-Protocol Router, MPR 3.0, in NetWare 4.1. "It allows you to configure different protocols, lets you configure from a single menu [and supports] IP, IPX and AppleTalk," said the customer, who requested anonymity.

Users said they are excited about the inclusion of wide-area routing capabilities in NetWare 4.1, especially if they need to expand their networks.

Dennis Gerrity, MIS director at the law firm of Stinson, Mag & Fizzell in Kansas City, Mo., said routing capabilities

in the core operating system would be a "valuable addition. If we expand our WAN, we would consider [NetWare 4.1] because external routers are expensive. Relying on that functionality in the operating system would save several thousand dollars."

Some of the features of MPR 3.0 — still unnamed by Novell but in beta testing now — include support for IP, IPX and AppleTalk over the wide-area, dynamic routing around failures, and support for Integrated Services Digital Network, including a filler facility that does not require the link to be up all the time, the beta tester said.

Thom Stark, president of Stark Rentals, a consulting firm in El Cerrito, Calif., said it makes perfect sense for Novell to add these features. Novell announced last month that NetWare 4.1 will include NetWare Link Services Protocol, which re-

duces routing information protocol and Service Advertising Protocol broadcast traffic on the network. The vendor could support other protocols over the wide-area network as well, Stark said.

Novell, however, said it will not embed MPR 3.0 in NetWare 4.1 but will sell it as a separate product after NetWare 4.1 ships next month. However, some of the product's functionality will be inherent in the new release of NetWare.

For example, IP, IPX and AppleTalk can be routed locally with NetWare 4.1. However, to route these protocols over a WAN, users would have to buy an MPR software add-on. NetWare MPR turns NetWare into a software-based router, allowing users to work with existing hardware, said William Donahoe, director of product marketing at Novell in Provo, Utah.



Users seek partitioning for client/server development

By Rosemary Calahan

When it comes to high-performance client/server development, the combination of Sybase, Inc. and Powersoft Corp. may find it has come catching up to do.

While Powersoft and other tools providers promise to deliver more sophisticated development functions within the next year or two, many users have already turned to a variety of tools vendors to get the capabilities they need today.

Among the most important new capabilities is application partitioning (see chart), which is emerging as a key piece of so-called second-generation client/server applications or true distributed applications. It allows users to design presentation, core application and database services as separate layers — a handy technique for managing the distribution of application functionality across a network.

While applications built with partitioning techniques are still scarce, many users are taking their initial steps into this realm with a range of high-end tools from startups such as Forte Software, Inc. and Dynast Technologies, Inc. as well as Texas Instruments, Inc. and Seer Technologies, Inc.

"We wanted a client/server tool that was object-oriented and supplied a total development environment and was not just a screen-builder," said Bill Bodur, director of information technologies at Medtronic, Inc. in Minneapolis, which has been working with the Forte development platform for nearly a year.

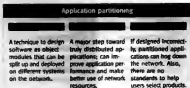
Because there is no standard approach to partitioning, users need to select tools carefully, analysts noted. The level of partitioning automation and

cross-platform support differs widely among vendors, so users could end up with different application models that cannot talk to one another.

One way that works

At The Travelers Insurance Co. in New York, Laura Mcweeney, an IS director, said her staff has been working with TT's Composer development platform, which allows developers to first create a client/server application design.

Composer shows developers how well balanced the code will be and where po-



tential network traffic problems could result. The system then generates code modules for different platforms, such as Cobol code for the back-end IBM DB2 server and C code for the client piece.

"We could look at the performance impact on the network, and then we could change the design without having invested a lot in coding," Mcweeney said.

Terry Melane, head of technology at Merger Technologies, the information services group of William M. Mercer, Inc., is working with the Interactive Development Environment's Object Modeling Technique and partitioning techniques.

Melane's staff created a set of back-end services or modules that reside on Unix servers and are accessed by three different front ends.

"Initially, we put all the code out on the clients, and we realized it would never work," Melane said.

Sybase, Powersoft rattle market

Merger may force rival vendors to improve services

By Melinda Carol Balton and Kim S. Nash

The Sybase, Inc./Powersoft Corp. merger last week means that competitive tools vendors will have to kick into overdrive to deliver or improve their goods, and quickly.

The move will be felt most particularly by Sybase competitors Oracle Corp. and Informix Corp., analysts said. However, companies such as Borland International, Inc., which will ship its Delphi PowerBuilder competitor product early next year, were also rattled by the announcement. "The combined Sybase/Powersoft offers a stronger competitive threat to Oracle than either company had been on its own," said Rich Edwards, an analyst at Robertson, Stephens & Co., a San Francisco brokerage.

On the other hand, it may be some months before Sybase and Powersoft can effectively integrate their products and the impact of the merger is completely felt in the market, according to Ed Acty, an analyst at International Data Corp., a Framingham, Mass.-based consulting firm.

Oracle's reign threatened

Prior to the move, Oracle had been the clear beneficiary of a stumbling Sybase tools initiative. New versions of Oracle's Cooperative Development Environment (CDE) tool, plus its Project X PowerBuilder competitor, are due out early next year. But while CDE offers benefits such as scalability, its current crop of CDE tools are difficult to use, according to industry analysts, and Project X is not yet shipping.

The Powersoft/Sybase merger makes delivery of Project X even more urgent and underscores Oracle's aborted attempt to acquire Gupta Corp. last summer.

The merger also makes it more critical for Informix to provide a graphical user interface-based, easy-to-use option. The company recently started shipping its

NewEra tools for Windows, which analysts said are more scalable than competing products.

Some speculated that Informix may now try to acquire Gupta for its SQLWindows low-end development tools and its desktop SQLBase database.

IBM also suffers from a dearth of tools and could use a tool similar to PowerBuilder to gain mind share, analysts said. IBM's Visual Age, like New Era, is not easy to use, although it offers scalable features.

But Sybase and Powersoft will not necessarily have a walk in the park. "They have a lot of work to do to bring a scalable product to the table," Acty said.

Smaller fourth-generation language companies with solid products, such as Progress Software, Inc., Cognos Corp. and JYACC, Inc., are likely to survive in niche markets that result from the gaps in capabilities between low- and high-end tools. But they may find a pinch without large corporate resources backing them, as the tools market becomes increasingly dominated by monolithic players, analysts added. Uniface Corp., for instance, was acquired earlier this year by Compuware Corp.

Sybase was smart to merge with Powersoft, said Judith Hurwitz, president of Hurwitz Consulting Group, Inc. in Watertown, Mass. "Sybase had not fast to effectively compete with Oracle and Informix," she said.

Correction

The story "CIOs warned to get their shops in shape" [CW, Nov. 7] omitted mention of the sponsor of the Information Technology Economics conference. It was *CIO Magazine*, an IDC publication.



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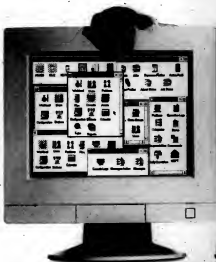


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OLAP leads way to post-relational era

The shift to relational databases, which began 10 years ago, is reaching maturity. Now its managers face a growing clamor for access to the corporate data squandered away in their flat, two-dimensional tables. But those end-users now might as well be populated with sprouts of corn and sugar cane for all the good they are to the average end user.

What has been hard to accept with relational databases is that despite their name, they yield very few relationships. Rows intersect columns, telling us of a minimal connection, and common attributes across tables provide cross references for files. But packing a join across large tables takes much more time. The returns of a join likewise tax the patience of end users trying to make sense of the data.

Consequently, both end users and IS are looking for a way out, some avenue to a post-relational era where relational data becomes accessible, analyzable and meaningful far below the level of the professional database administrator.

Two routes are emerging. One is to employ a multi-dimensional database system to front the relational systems, consolidating data in sets that can be sliced and diced different ways, and other is to move to an object-oriented system that can handle complex data in a format specifically useful to the organization.

Examples of the former include *Endace* from Arbor Software Corp. in Sunnyvale, Calif.; *UniVerse* from VMark Software, Inc. in Framingham, Mass.; and *Express* from IRI Software in Waltham, Mass. These applications pack data into cube-like formats, adding a third dimension that might yield a time sequence for a given relationship.

The information these multidimensional applications deliver is something like that of an executive information system (EIS) but in a much more flexible, reconfigurable format. They are also designed to use on-line data and hence are referred to as On-Line Analytical System Processing (OLAP). The queries fielded by OLAP systems are essentially ad hoc SQL queries rather than predefined EIS sets of queries.

Object-oriented systems handling user-defined data come from *Object Design, Inc.* in Boringham, Mass.; *Illustro Information Technologies, Inc.* in Oakland, Calif.; *OpenOffice* from Hewlett-Packard Co. in Palo Alto, Calif.; and *Unisql*, Inc. in Austin, Texas.

National Investment Management in Milwaukee, a private brokerage firm, uses *Illustra* to track trading patterns in historical records on thousands of stocks. "If you're tracking 20 years of data on 6,000 stocks, the number of rows in a relational table is enormous," said Jim Maldonado, research manager at National Investment. Much of it is in the form of repetitive single-day trades that could be grouped together into much larger results of data, which would reduce the amount of time needed to search the table.

By using an object relational system, Maldonado is able to create his own data type—for example, the trades of a given stock across a predictable time period—and have each stock that is loaded into the database exhibit similar characteristics. This allows more related data to be encapsulated in an object than could be represented by the two-dimensional tables of a relational system.

"Without *Illustra*, you're not exploiting the inherent properties of the data," Maldonado said, and you pay a performance penalty as a result.

With databases proliferating, the ability to see beyond the reams of data to the underlying information is crucial to continued productivity. The OLAP application and object relational system work with relational databases to point the way to the post-relational era.

Illustra is Computerworld's technical editor. His MC Mail address is 575-2737.

Chip strategies

Apple delays adding PowerPC to portables

By Mark Halper

NOTEBOOKS

Information systems shops that have been waiting for PowerPC-based computers from Apple Computer, Inc. have an even longer wait ahead.

Apple confirmed last week it will not add the PowerPC chip to its portable line until mid-1995, which marks a slip from the spring target promised to users in recent sales presentations.

Jim Gable, an Apple product line manager, declined to explain the delay.

But one source, who asked not to be identified, said Apple and its PowerPC co-developers IBM and Motorola, Inc. have had to redesign the PowerPC 603 to improve its ability to emulate the 68000 chip that drives Apple's portables and older desktop boxes.

The 603 chip is the low-power consumption version of the PowerPC, intended for use in portables. Now, Apple is shifting to a version called the 603 Plus to replace the 603, the source said.

Mixed reactions

Although some users said they were more focused on their desktop initiatives than leading-edge notebook matters, the delay came as disturbing news to others with ambitious portable computing plans.

"This is very disappointing. It's going to severely impact decisions we're making about rolling out portable computer-based solutions," said Philip Corchery, a network systems analyst at US West Marketing Resource Group, Inc. in Omaha.

US West has been counting on the PowerPC-based systems to strengthen its sales force automation program. Between 600 and 700 salespeople use up 68000-based Apple portables to help sell Yellow Pages. But the existing models lack the power needed to run a custom-written US West presentation program, Corchery said.

At Cornish & Carey Residential Real Estate in Palo Alto, Calif., the delay could mean a shift

to Intel Corp.-based portables for real estate agents. They use portables to make on-the-go sales presentations using multiple-listing software, said Bob Duffy, IS manager at Cornish. He said the company prefers to run Windows applications over Mac OS, the next version of Apple's System 7 operating system, but 68000-based Apple notebooks do not run those applications fast enough.

"It's a shame," Duffy said. "We like the Mac OS. It's very intuitive for our real estate agents. But this is probably going to turn a lot of our agents toward Windows machines."

More than just a portable

John Papa, a partner analyst at financial consulting firm The Carson Group in New York, said he is eager to receive the more powerful notebooks because they will strengthen consultants' ability to provide financial analysis at client sites.

"It will allow us to do some tremendous crunches of data," Papa said. "With a chip as powerful as the PowerPC, people won't be saying 'it's just a portable, and it's not that great.'"

Users such as Tim Yancy, manager of customer service automated systems at Southern California Edison in Rosemead, were among those paying little heed to the portable delay. "I don't think it materially impacts our plans because we're not really deploying any applications yet that require PowerPC speeds," Yancy said.

For users such as Valerie Takemoto, a technical staff member at The Aerospace Corp. in El Segundo, Calif., notebook concerns boiled down to an age-old issue.

"Everybody is in the mood for speed, but Apple is going to have to make sure the battery life goes with it," she said.

Looking ahead

The PowerBook line, introduced by Apple last spring, will be upgradeable to a PowerPC once Apple makes upgrade cards available. Apple recently discontinued black-and-white, high-end 300 and 350 PowerBooks.

Microsoft Marvel is less than its name

One marvel about Microsoft Corp. Chairman Bill Gates' plans for an on-line information network is that the long-experted announcement could generate so much attention despite an unremarkable introductory services mix and unknown pricing.

Then again, as announced last week, the Microsoft Network—code-named *Marvel*—does include at least one potentially powerful challenge to established on-line network providers such as America

Online, Inc. and CompuServe, Inc. Access to the Microsoft network will be handled directly from the Windows 95 operating system, the next version of Windows, rather than through a separate communications application.

Gates also deflected suggestions that the service would be uncompetitive, arguing that users will have the choice of information network providers.

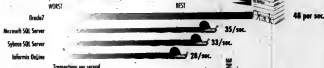
Microsoft said it would deliver a suite of tools for content providers to develop services

on the network, which will support access speeds of 240 kb/sec. to 14.4 kb/sec.

Microsoft said it wants to expand the size of the on-line market, which currently claims just 4% of U.S. households overall. Its information network would include electronic mail, bulletin boards, "chat rooms," file libraries and Internet news groups, the company said. Members will also be able to access Microsoft tools, product information and technical support.

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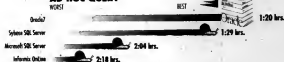
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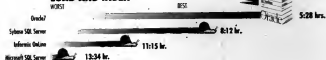
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News Shorts

AST to halve size of product families

By the first quarter of next year, **AST Research, Inc.** plans to sell only half the number of products it does now, according to Chairman and Chief Executive Officer Saffi Qureshey. Among the products getting the axe are all 60- and 66-MHz versions of Pentium-based systems as well as all 486 models below the 66-MHz DX2 processor. Qureshey said AST "got involved in too many things" and needs to concentrate on core technologies.

Chicago exchange rolls out handhelds

After several delays over the years, the **Chicago Board of Options Exchange** last week began delivering wireless handheld computer terminals to its trading pit members. Some 150 wireless units will be deployed by the summer. The exchange eventually expects to have 800 of the systems in place. Wireless terminals, which promise to execute trades faster and provide a secure audit trail, were first tested by the exchange in 1987.

Oracle to resell hybrid DBMS

Oracle Corp. plans to start reselling **UniSQL, Inc.**'s hybrid object-relational database as part of an initiative aimed at large oil and gas companies. Oracle said last week. The Oracle/Unisys program also calls for Oracle to support applications set forth by the Petrochemical Open Software Corp., a group of 80 fuel companies and hardware and software vendors working to set computing standards for that industry.

Circle K outsources data center

Circle K Corp., a Phoenix-based convenience store chain, has struck a five-year deal to outsource its data center with **Unisys Corp.** Under the agreement, Unisys will provide data center management services and data communications operations support. In addition, 15 Circle K staffers will transfer to Unisys' Phoenix data center.

Consumer video service deals struck

IDB and ICTV have announced a marketing and development agreement by which both companies will provide video-on-demand and interactive services technology to cable operators and telecommunications providers. Separately, **BT** plans to offer commercial interactive television services based on Oracle multimedia software to 2,500 homes in England by mid-1995.

HP announces record revenue

Hewlett-Packard Co. ran up record quarterly revenue of \$7 billion for the company's fourth quarter ended Oct. 31—making it a \$25 billion company for the year. Earnings were \$476 million, 60% higher than for the same quarter last year. HP's global markets accounted for 51% of revenue in the fourth quarter, while strong printer, PC and Unix server sales boosted the bottom line, analysts said.

SHORT TAKES Control Data Systems in Arden Hills, Minn., will announce next week its E-Net World in Boston a new business division for electronic data interchange. ... General Electric Co. will spend \$1.3 million over three years for **Computerization Corp.** computer-aided design software and training. ... **Digital Equipment Corp.** won a five-year contract to manage the infrastructure of Microsoft's on-line services, called **Microsoft Network**. The company competes with Andersen Consulting, Electronic Data Systems Corp., and Sequent Computer Systems, Inc., and will manage the data center, help desk and command center, which houses 200 million vendor servers.

Job hopping key to IS success?

By Julie King

Last week was a time of musical chairs in the corporate offices of **Procter & Gamble Co. (P&G)**, **Xerox Corp.**, **Microsoft Corp.** and **Bell Atlantic Corp.**, which all lost or gained highly experienced information systems executives.

And the dance has only just begun, according to recruiters and consultants, who predict a continuation of high-profile job hopping between firms by top IS talent.

"Historically, the odds have not been good for CIOs getting promoted within their companies," said Tom Friel, managing partner of executive recruiting firm **Heitric & Struggles, Inc.** "The only real option to advance their careers is to change companies."

An upward migration

Longtine P&G Chief Information Officer **Roger L. Herbold** is joining **IBM** as chief operating officer. A 25-year veteran of the Cincinnati consumer goods company, Herbold, who is experienced in both consumer marketing and IS, will become a member of **Microsoft's** office of the president, reporting directly to Chairman and Chief Executive Officer **Bill Gates**. Meanwhile, in taking over as

vice president of information processing at **Bell Atlantic**, **Laraine Rodgers**, former CIO of U.S. consumer operations at **Xerox Corp.**, moves from an \$8 billion business unit to an \$13 billion enterprise at the forefront of the red-hot telecommunications industry.

Based in Silver Spring, Md., Rodgers will oversee virtually all of the telecom giant's computer and network operations. She will also play a key role in consolidating seven data centers into two, a downsizing plan announced earlier this year by **Bell Atlantic** CIO **Ralph Sayegza** [CW, Aug. 22].

Xerox said it has not yet named **Rodgers' replacement**. "The telecom industry, in my opinion, is the place to be," Rodgers said last week. One of the reasons she joined **Bell Atlantic** was to expand both her responsibilities and her chances for career advancement, she said. "I was responsible for delivering about \$50 million in services at Xerox and initially had 500 re-

ports. Some of those were outsourced and/or replaced. I had accountability but not the staff," Rodgers said.

"**Bell Atlantic** is larger in terms of the numbers of people," she noted, adding that the support staff she now oversees numbers about 1,000 people spread over seven states.

According to **Kay Lewis Redditt**, president of **Cognitech Services Corp.**, an IS consultancy in Easton, Conn., Rodgers' expanded responsibilities track the experience of other high-level IS executives who have switched companies, often to assume the same job title.

Inside their own companies, all CIOs' technical acumen and business knowledge "tend not to be recognized," Redditt said.

By way of example, she noted that 60% of CIOs are excluded from high-level strategic planning activities and decisions, including those that affect the technology.

Once they change companies, however, "CIOs are generally given a better chance," she said.

Bell Atlantic's Laraine Rodgers is all over the management of IS resources

Techno-hip is choice of new breed

By Thomas Hoffman

You might say **Daniel G. Hoffman** is a trendsetter.

The 36-year-old chief executive of **Uni-Data and Communications, Inc.** has closely gauged the role technology plays, both inside and outside the corporate walls of the Flushing, N.Y. systems integrator. The past four years have witnessed a wild ride of 200% plus annual revenue growth for the \$6 million firm.

Hoffman represents a new breed of corporate chief executives who are passionate about the impact technology has made on their companies' achievements. "Our charter is to make sure that technology is an enabler for our customers, so it's important that we take full advantage of it internally," he said.

For example, Hoffman has seen it to that **Uni-Data's** PCs are linked via leased lines to customer networks, such as the forthcoming Unix-based trading floor it is helping to roll out at **The Chase Manhattan Bank NA** in New York. This helps ensure that all of the workstations and servers it has installed for the \$102 billion bank are running smoothly.

From the hip

Indeed, it is a brush over style of techno-hip management that has helped **Uni-Data** and other upwardly mobile companies become successful so quickly, according to a recently completed survey conducted by **Capersham & L.L.P.**

Coopers' "Trendsetter Barometer" survey of chief executives at 410 of the fastest growing U.S. firms revealed that successful start-ups have risen quickly—thanks to their leaders' unabashed approach to in-

formation technology in their organizations.

For example, chief executive officers of fast-growing firms estimated that their annual investments in information technology represent an eye-popping 7.8% of overall revenue. Even though most of these companies are not saddled with the enormous overheads of larger firms, their relative technology investments are still considerably higher than the standard 1% to 3% at established companies.

Flexibility payoff

Smaller companies "can scale up and down with PCs, implement easy-to-install networks and make [technology] combinations where needed," said **Bob Caline**, director of entrepreneurial advisory services at the New York-based **Big Six** accounting firm. "That's one of the benefits of being a smaller company and one of the main reasons they can compete more effectively with giants."

That type of flexibility appears to be paying off for **Ecco Products, Inc.**, a developer of environmentally safe household and industrial cleaning products in Freehold, N.J.

Alfred Heyer, founder and president of the 3-year-old firm, believes his company's grass roots PC mentality helped it win market share from industry Goliaths such as **Procter & Gamble Co.** and **Dow Chemical Co.**, both major conglomerates saddled with a heavy legacy systems.

"The use of smaller systems has given us an edge" over some industry goliaths from which Ecco has won market share, Heyer said. The company's revenue is on course to increase tenfold to \$1 million when its fiscal year ends in June 1995, he noted.

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IBM begins AS/400 cluster rollout

By Craig Stedman

IBM has begun to deliver clustering technology for the AS/400 to meet the demands of large customers for more mainframe-like computing power and systems management capabilities. But it will take another two to three years to get full clustering support in place.

Initially, IBM is quietly rolling out a fiber-optic interconnect that allows disk storage to be shared between multiple AS/400 systems. OptiConnect/400 can support either peer-to-peer links of AS/400s with their own internal storage or a tiered approach in which a single database server is connected to different application engines, according to IBM.

OptiConnect/400 should be installed at about 15 customer sites by year's end, IBM officials said. General availability is tied to next spring's scheduled introduction of a line of PowerPC-based AS/400 machines.

David Andrews, managing director at D. H. Andrews Group, Inc. in Cheshire, Conn., said early interest in OptiCon-

nect/400 is limited to a couple dozen of the largest AS/400 shops. But the market for the product could expand "if IBM pushes [mainframe downsizing] harder with the AS/400," he added.

More complete clustering capabilities will follow, including support for managing a group of AS/400s as a single system. That item is high on the wish lists of some large shops that run their businesses on multiple AS/400s, but it will not emerge from the laboratory until 1996 or 1997, IBM warned.

The lengthy wait could prompt Countrywide Funding Corp., one of the earliest OptiConnect/400 users, to put the interconnect on hold once a PowerPC-based AS/400 that can meet its workload becomes available, said Bob Membrilla, AS/400 systems architect at the Pasadena, Calif., home mortgage company.

Countrywide has been beta-testing OptiConnect/400 since June and is in the final stages of putting it into production to link an existing AS/400 F87 with a new F80 for use in loan servicing, Membrilla said. However, OptiConnect/400 may be used mainly as a bridge to the PowerPC-based hardware, he added.

"OptiConnect still involves managing two different systems, and we'd like to keep it to one," Membrilla said. The single-system image support promised for the future "looks real appealing based on what we've seen," he noted. "But being three years out, it's hard to say for sure whether we'll use that."

More than meets the eye
With 16 AS/400s installed in its data center, Enterprise Rent A Car Co. in St. Louis is also itching to get full clustering capabilities, said Marc Cohn, senior vice president of information systems. But he added that the complex nature of the technology makes IBM's slow pace understandable.

Developmental work "seems to be moving along, and it's heartening to hear that [clustering] still lives," Cohn said. "I appreciate the caution that IBM is showing here, because there's more to this than meets the eye."

OptiConnect/400, which Enterprise plans to install in December, "is still a fairly narrow thing" for distribution, Cohn said. However, he said the 220M bit/sec., bus-to-bus interconnect should be a big improvement over a current software-based approach that has "intolerable" performance and puts a major programming burden on customers.

Industry coalitions oppose IBM trying to roll back the 1995 Consent Decree. See page 66.

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IS cheers GOP rule

CONTINUED FROM COVER 1

at Allied Signal Technical Services Corp. in Columbia, Md. They won't let this momentum that's been created in the Clinton administration fall by the wayside."

Industry executives, meanwhile, give the Democrats a mixed report card.

"I was one of the Republican CEOs in Silicon Valley that supported Clinton in 1992, and I've been really impressed with his handling of trade issues and the economy," said Edward R. McCracken, chief executive officer at Silicon Graphics, Inc. "The disappointment is that he was not able to work with the Democratic Congress."

McCracken said a Republican Congress is more likely to satisfy his legislative wish list, which includes telecommunications deregulation, reduction in capital gains taxes, curbs on abusive shareholder lawsuits, rollback of a proposal to change the accounting for stock options and approval of the General Agreement on Tariffs and Trade (GATT).



Eric Singleton, IS director at Allied Signal Technical

Some attached less importance to the new Republican majority. "I don't see [the election] having any effect," said Microsoft Corp. Chairman and CEO Bill Gates. "It won't change the date we ship Windows 95 or the features, either."

However, getting the nation's financial house in order is a key concern for the industry. "To the extent that the Republican majority takes a real bite out of the deficit, the business world will think that's good for interest rates, tax rates and cost of capital," said Michael Malbach, director of government affairs at Intel Corp.

"The tax bill of 1983 raised Intel's taxes by millions of dollars," he said. "We don't think that was very helpful."

Malbach said Intel's top priority in the taxation realm is tax simplification, something Rep. Bill Archer (R-Texas), incoming chairman of the House of Representatives Ways and Means Committee, said he plans to pursue.

Furthermore, the GOP's "Contract with America" calls for a 50% cut in the capital gains tax, a measure likely to be passed by the GOP-controlled tax committee. President Clinton, however, may oppose it.

Prospects for the high-tech industry's beloved tax

universities for R&D in basic new technologies.

One high question is whether the power shift in Washington will jeopardize plans for the multibillion-dollar information superhighway.

"My greatest fear is that the whole thing becomes politicized," said James A. Usher, chairman and CEO of Unisys Corp. "Because it's been such a high-profile area of support of the Clinton administration... there might not be the same support and it may hurt the rate of progress."

Craig Benson, chairman and chief operating officer at Cabotronics Systems, Inc., said Clinton's information highway program is likely to get down the tubes. Clinton is going to focus on what will get him votes, and the superhighway will not do that for him.

Industry lobbyists are also worried that with hard-line conservatives controlling the House agenda, the prospects for lifting export controls will go from bad to worse. "This is the most uphill, adverse area for high-tech business, without any question," Peyton said.

That is because moderate Democrats support the relaxation of Cold War-era export controls, while conservative Republicans worry more about technology falling into the wrong hands. Even so, moderates have lobbied for three Congresses in a row to pass export control reforms.

Most observers agreed that deregulation of the communications industry is likely to thrive under Republican sleazebagging. "It will be a factor, but by at least a factor of two," predicted Michael Roberts, networking vice president at Educom, a Washington-based association of universities.

"Republicans would like the controls off, let the players compete and then look for market damage," he said. "The [Democratic] view is that this is too hazardous — too many little people will get screwed — so you have to let the regulatory barriers down very slowly and calibrate it every inch of the way."

What will become law? Republican leaders have said that passing telecommunications legislation will be one of their top priorities. The bill is expected to be much shorter than last year's ultracomplex Senate version, which ballooned up to 160 pages and then collapsed.

Senate Republicans are now talking about a 30-page bill to free the regional telecommunications manager from current restrictions and encourage more competition. Rep. Jack Fields (R-Texas), who is expected to take over the House telecommunications subcommittee, said he is committed to an aggressive schedule to pass a telecommunications bill by April.

"Anything that comes out of the new Congress will be more simple and probably more deregulatory than in the past," said one telecommunications manager, who requested anonymity. "But Republican priorities will occupy a lot of time, so there's no assurance telecom legislation will be on a fast track in Congress."

Charles Wang, CEO of Computer Associates International, Inc., summed up the view of a number of CEOs, saying, "There's a message being sent by the American voters that the government isn't working today. Whoever is there [in power] better work together and make significant changes in the way things get done. Otherwise, they'll boot them out."

Computerworld staff contributed to this report.

HOW WILL A REPUBLICAN MAJORITY IN CONGRESS AFFECT THESE AREAS OF BUSINESS INTEREST?			
BASE: 100 IS MANAGERS FROM FORTUNE 1,000 COMPANIES			
	HELP	HURT	NO EFFECT
The information superhighway	43%	10%	32%
Vice President Gore's Reinventing Government Initiative	33%	30%	25%
Various tax policies and cuts	80%	5%	8%
Telecommunications regulatory climate	61%	8%	15%
Export controls/trade policies	47%	16%	19%

"Don't know" responses omitted

Source: Computerworld survey

credit for R&D expenditures are even less clear. Although there is bipartisan support for making that tax credit permanent, budget pressures will be fierce.

"The Republicans have supported a permanent R&D tax credit for a while. We sure hope that will emerge in some sort of tax package, but there is always the question of how you pay for it since there will be a short-run revenue loss," said David V. Peyton, a vice president at the Information Technology Association of America in Arlington, Va.

The Contract with America also calls for scaling back programs that smack of industrial policy, such as the U.S. Department of Commerce's Advanced Technology Program (ATP). The ATP gives grants to companies and

Alvin Toffler's model," he said.

On a recent TV talk show, Gingrich illustrated his point that rural America is becoming a technology-less province by noting that PC maker Gateway 2000, Inc. is the largest employer in Sioux City, Iowa.

This rap is music to the ears of at least one industry lobbyist. "For the new speaker to realize that even in a rural community that information technology has an important place in the economy and employment — that is certainly a signal that he recognizes the part that information technology plays," said Ted Heydinger, vice president for government relations at the Computer and Business Equipment Manufacturers Association.

But is it just talk? "A lot of Gingrich's rhetoric sounds really great, but we'd like to see a better tie-in between the votes and the rhetoric," said David V. Peyton, a vice president at the Information Technology Association of America. He said Gingrich has not been helpful to two industry priorities: passage of international trade legislation and relaxing export controls.

"It's one thing to be eloquent about global markets," Peyton noted. "But there isn't a serious legislative program that includes getting rid of some of these unilateral controls. So what good is the rhetoric?"

Gingrich touts on-line government

By Mithen Betts

WASHINGTON

Move over Al Gore. Next Gingrich, the Georgia Republican who is due to be speaker of the House of Representatives, may be Washington's next techno czar.

Already, Gingrich has talked about putting congressional bills and reports on computer networks — perhaps the Internet and computer bulletin boards — to improve public access.

That way, proposed legislation will be available to "every citizen in the country at the same moment that it is available to the highest-paid lobbyist in Washington," he said in a Nov. 11 speech.

The technical details remain to be worked out, but the Georgia's determination is fierce. "There's no objective reason that institutions of government have to be two or three generations behind the curve in information systems and management," Gingrich said. "But they are."

With his helmet of white hair and aggressive style, Gingrich calls himself a "conservative futurist" and peppers his speeches with terms like information society and telemedicine. "We have to accelerate the transition from a second-wave mechanical, bureaucratic society to a third-wave information society in use [author]



Future Speaker of the House, Gingrich says he wants to bring on-line information to "every citizen."

Computerworld



Craig Benson, Cabotronics' chief operating officer



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Network Notes gets market workout

Users spared wide-area network links, added Notes servers

By Lynda Radosevich

When AT&T Corp. and Lotus Development Corp. announced plans to create a Notes network outsourcing service last March, Helen O'Connor jumped to offer her firm as a test site.

O'Connor, a vice president and director of telecommunications at First Albany Corp., wanted to expand the financial services firm's Notes network from its Albany, N.Y., headquarters to remote offices and client sites. However, she did not want to maintain the wide-area networks and multiple Notes servers that such an expansion would require.

"I'm thinking of keeping my MSB people sane and happy," O'Connor explained.

It turned out that a number of users shared that feeling. So First Albany and several other user companies joined a limited AT&T Network Notes market trial, which AT&T and Lotus officials announced at Comdex/Fall '94 last week. It is the first in a series of testing phases that, if successful, will result in a commercially available service near the end of next year, they said.

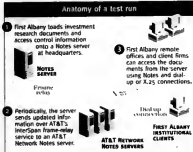
AT&T Network Notes is a WAN service based on Notes and AT&T's Interplan network.

Joining First Albany are Compuser Computer Corp., Individual, Inc., BM Co., Egghead Discount Software and several third-party development partners, including Triazine Corp. and Worklink, Inc. [CW, Oct. 24]. The companies will help test everything from AT&T's administration of the service to the frame-relay connections and Notes server reliability. In turn, the firms hope to get a leg up on their competition by using Network Notes to more easily distribute their own electronic products and services.

"We can't say anything more about it because it's a competitive issue," a BM spokesman said.

Meanwhile, AT&T is planning the following measured approach to the network rollout:

- Beginning this month, the select handful of trial companies will test the service using Notes 3.1 server software running on OS/2 and AT&T Global Information Solutions server boxes. The companies will be allowed to connect to only 10 to 20 end points.
- In January, about two dozen customers will be added,



ed, and they will be able to reach an unlimited number of end points. The idea is to test AT&T's ability to deliver software and get users up and running.

In the third quarter of next year, following the delivery of Notes 4.0, AT&T will begin rapidly expanding the number of user sites and continue to offer unlimited end point access.

Throughout the trial, the companies will enter information and maintain access control lists in a Notes server. Up to 20 times a day, the server will update an AT&T Network Notes server, from which remote users can access the information via Notes client software (see chart). The benefit is that the user sites do not have to maintain the wide-area connections and the remote sites do not require their own Notes servers. For these reasons, and others, O'Connor said she asked to join in the trial. First Albany already uses Notes internally to route investment research reports through a review cycle. Now it plans to use AT&T Network Notes to distribute up to 10 reports a day to field offices and clients that already have Notes. O'Connor did not have specific pricing information but estimated that it would cost roughly the same as running the server in-house only it would result in lower administrative headaches.

KPMG adopts an enterprise groupware system, but it's not the only one this year. See page 58.

IBM Workgroup line finally lands in beta

By Suruchi Mohan

• Having long proclaimed to the world that its Workgroup family of products was coming, IBM announced last week at Comdex/Fall '94 that they are in now beta testing.

IBM's Workgroup line is a combination of information management, work management and communications products, all designed to let users plug-and-play. At the heart of the series is Ultimate, a client/server messaging system that ties into the already shipping Message Queuing/Series. The latter provides queuing and log-in support for the messaging server and can also act as a backbone for other applications.

In addition, IBM's Workgroup includes FlowMark for workflow management, Visual Document Library for document management and FormTalk for forms routing.

Difficult sale

However, IBM will face a tough sales effort once it finally ships the products given its late entrance into the workgroup market, where it will compete with the likes of Notes, said Michael Rothman, a program director at Meta Group, Inc. in Reston, Va. IBM will have to explain to its sales force, which already resells Notes, why they should sell this IBM product.

Joe Waynick, assistant vice president of technical support at Union Bank, a large IBM shop in Monterey Park, Calif., already has an electronic-mail platform in place. "My preference is a one-vendor solution in a multipatform [environment], but IBM didn't have an offering" when the bank was evaluating products more than a year ago, he said.

Union Bank is mulling joining the workgroup arena, and Waynick now plans to evaluate Notes and IBM's Workgroup products.

Rothman agreed that IBM's offering would be important for "true-blue shops who still buy into a single vendor." But, he added, they are late, and their limited platform support will initially restrict their market domestically. IBM has said that its workgroup server products would run on OS/2 and AS/400 operating systems initially and on AIX by late next year [CW, July 11].

Internationally, however, its products may be seen as a good plan for migrating to the client/server workgroup environment. IBM's Message Queuing/Series offers a good platform for workgroup-type applications, Rothman said.

Windows 95 applications not compelling so far

By William Bransford

While the marketing blitz for Windows 95 software was in full swing last week at Comdex/Fall '94, vendors have so far offered no compelling reasons for customers to upgrade to upcoming Windows 95 applications.

"I haven't seen or heard anything about what will be in Windows 95 applications that would make me choose those over OS/2," said Matt Boxer, an applications programmer at Chevron Corp. in San Francisco. "The driving factor seems to be that there will be a massive amount of applications that run with Windows 95."

Officials from Microsoft Corp., Lotus Development Corp. and WordPerfect, the Novell Applications Group, all said they are still undecided on the specific features that will

make up their Windows 95 products (see chart). Windows 95 is Microsoft's next generation of Windows.

"I saw a number of the Windows 95 applications, and I can't remember anything interesting that I saw out," said Jeffrey Tartar, editor of "Soft Letter," an industry newsletter in Watertown, Mass.

The vendors all made efforts to drive home the point that hardware upgrades will not be required to run Windows 95 — a big concern for users. In a user survey conducted for *Computerworld* last summer, as many as 46% of 100 information systems managers said they expected to upgrade their systems in order to run Windows 95.

But at the show, Microsoft demonstrated its Office applications multitasking on a beta version of Windows 95 running on a 486 laptop. WordPerfect officials said users would be able

to run Windows 95 applications comfortably with 8M bytes of RAM.

All three vendors said they will at least support the seven features that Microsoft has mandated for Windows 95 compliance. Without such compliance, the vendors will not be able to use the Windows 95 branding.

The vendors demonstrated some of these capabilities at Comdex. Lotus, for example, showed support for long file names in its applications. WordPerfect demonstrated a multithreaded, 32-bit version of WordPerfect 6.1 running on Windows 95.

While multithreading and 32-bit mode processing may improve application performance, such benefits are not easily demonstrated.

Tartar noted that most developers are targeting basic compatibility with the new operating system their first time out rather than pizzy new applications for it.

"There's nothing that revolutionary being done," acknowledged Gary Gabb, director of PerfectOffice development at WordPerfect.

Vendors encourage third-party suite add-ons. See page 39.

The Windows 95 applications compliance list:

- ▶ Long file names
- ▶ Windows look and feel
- ▶ Common messaging call support
- ▶ OLE 2.0 automation support
- ▶ Ability to run applications on Windows 95 and Windows NT
- ▶ 32-bit mode
- ▶ Plug-and-play compatibility
- ▶ Universal naming convention support

Alliance raises hopes, red flags

CONTINUED FROM COVER 1

Sybase ate a bit of humble pie last week, added Aaron Zornes, a senior vice president at Meta Group, Inc. in Burlingame, Calif. "They needed PowerBuilder because they haven't been able to deliver on the tools side," he said.

Stu Schuster, executive vice president of marketing at Sybase, acknowledged in an interview last week that "part of this was a result of being slow to market" with Sybase's own graphical development tools.

No competition

Other market realities also dawned on Sybase.

Even if Build Momentum shipped immediately, as Sybase officials claimed it was about to, the product would be hard-pressed to compete financially with existing tools, said Mark Hoffman, Sybase chairman, president and chief executive officer.

"If Build brought in \$20 million in sales for 1995, that would be tremendous

penies becoming one. They questioned whether PowerBuilder will continue to support all databases equally.

"As an Oracle user, I am highly disappointed," noted Charles Snowden, manager of marketing information systems at Ciba Textile Products Corp. in

Greensboro, N.C.

Sybase and Powersoft officials vehemently denied that PowerBuilder will work better with Sybase's SQL Server than with databases from Oracle Corp. or Informix Software, Inc., IBM's DB2 or other databases.

"I can guarantee our customers that from the Powersoft point of view, we will have a level-playing-field policy," said David Litwack, Powersoft's president. "The ball is in the other database ven-

dors' courts to be prepared to work with us."

Still, some non-Sybase users wondered where they stand. "We don't want PowerBuilder to be held captive by Sybase," said Blayne Marling, assistant vice president of architecture at GTE Telephone Operations. Informix's Informix-OnLine is the primary relational database at the Irving, Texas-based division of GTE Corp., he said.

Red flags flutter



growth. But compared to Powersoft's \$200 million expected in 1995, we would still have a long way to go," Hoffman said.

Whether to ship or scuttle Build Momentum is a decision likely to be made by the first quarter of next year, said Robert Epstein, Sybase's executive vice president. It was sold into a limited set of customer sites and is now officially on hold, he said.

High hopes

For some users, the merger raised hopes that client/server systems may become easier to manage.

"One of the biggest problems in client/server can be finding where the problem is," said Paul Ratner, vice president of corporate information systems at Metropolitan Life Insurance Co. in Parsippany, N.J. "This is great to have one company own a larger piece of the client/server process."

Yet some users among the nearly half of Powersoft's estimated 100,000 installed base who do not run Sybase SQL Server were not as keen on the two com-

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IBM, Novell push integrated network management

By Steve Moore
SANTA CLARA, CALIF.

IBM and Novell, Inc. last week unveiled product modifications that enable NetWare LANs to be mapped and managed from IBM's NetView for AIX network management platform.

At the Enterprise Management Summit here, the companies said the new capabilities are embedded modifications to NetView for AIX and Novell's NetWare Management System (NMS). IBM and Novell officials said users have been pressing them to support management of NetView for AIX and NetWare environments from a single console.

AI in one

"The one-console approach will allow users to look at multiple devices without turning around in their swivel chairs," said Bob Janssens, a LAN management analyst at the Business Systems Group in Houston. For larger shops, he added, having a common platform for NetView

for AIX and NMS in the control center will likely result in significant savings in both training and administrative costs.

IBM and Novell said users have also been asking for integrated network management functionality. However, some users are content with their current management practices.

"If we had our own NetWare servers centrally managed, we might be able to respond quicker to problems," said Ralph Tooker, a senior communications systems programmer at American Cyanamid Co. in Clifton, N.J. But he noted that most of his company's servers run independently with few problems. "If a problem takes half a day to solve but only happens twice a year, nobody worries," he said.

Initially, users will be able to integrate topology, performance and fault-management functions. By the end of the year, NetWare Ethernet traffic informa-

tion will be accessible via NetView for AIX as a result of updates to IBM's Rmonitor for AIX and Novell's Analyzer LAN analyzer. Support for Token Ring networks is planned for next year.

Separately, Digital Equipment Corp. said it would release next month a developer's kit for a Windows NT workstation version of Polycenter Manager on NetView. The final product will run on total Corp. or Alpha AXP NT servers and use the Windows 95 interface. Windows 95 is Microsoft Corp.'s next version of Windows.

Users at the conference flocked to witness real-time vendor problem-management scenarios.

"No one has done anything like this before, throwing platform vendors into a pit and saying, 'Here are 15 problems. Show the world you can really do end-to-end management,'" said Rick Sturm, the conference program chairman and a

technical staff member at U/S West, Inc. in Denver.

Each vendor knew in advance the general nature of the problems but not the specifics of the network events generated in real time by the show organizers. Among other things, vendors were called upon to determine the cause of slow network response time, deal with a relational database fragmentation problem and download software to systems in multiple operating system environments.

Users said they liked the vendor management scenarios and the strong user orientation. But the pervasive orientation toward distributed client/server computing was not completely relevant to one mainframe user from a large East Coast insurance company, who requested anonymity.

"I've seen the industry cycle three times between the centralized and distributed paradigms," he said, adding that the centralized approach has served his company well through all those cycles.

Reporter's Notebook

Advanced Micro Devices (AMD)

says its K3 family of microprocessors will be fully compatible with Windows. "We are ecstatic," a spokesman

said after the company tested and booted Microsoft's Windows 95 on its processors last week.

AMD has sought to reassure customers and analysts that the K3 will be backward- and forward-compatible with Windows. By next month, AMD plans to distribute alpha samples of the new Pentium-class processors, which will ship in volume in the second half of next year.

Three years after he delivered a keynote address at Comdex, Intel Chairman Andrew Grove looked back at predictions he made in 1991.

Among his hits were local bus graphics (Peripoint Component Interconnect), the evolution of color notebooks and electronic messaging (E-mail). Ranked as misses were pen-based wireless notebooks and multimedia

messaging. In between fell Plug and Play technology. As for his visions for the future, software-based, real-time, full-motion videoconferencing and multimedia, multimedia, multimedia.

Separately, while Grove discussed the need for unified standards for the PC industry in his keynote, senior executives at rival AMD said

they will try to establish their own standards. Executives would say only that one of the first specifications

could relate to multiprocessing. They said AMD is trying to garner support from industry heavyweights for an alpha-based specification for multiprocessors, which AMD claims is not really open.

Digital demonstrated Windows NT clustering capabilities on a modified Alpha AXP and Intel servers. The clustering software—which runs on top of NT

and is supposed to ship as a shrink-wrapped software developer's kit—is slated for a late spring beta, with first customer shipments in late fall. Digital will sell the technology to OEMs and other partners.

Microsoft accused of backing off standard

IBM, Novell say the firm is waffling in support of DMI

By Steve Moore
SANTA CLARA, CALIF.

IBM and Novell, Inc. came out swinging at Microsoft Corp. last week, accusing the software giant of waffling in its support of an emerging standard for desktop management.

In an unusual show of public pique at the Enterprise Management Summit conference here, IBM's director of enterprise management platforms, Lynn Wilczak, said Microsoft was "backing off" its support of the Desktop Management Interface (DMI), a client/server systems management standard being developed by the Desktop Management Task Force (DMTF).

Ve Langford, vice president of Novell's management products division, agreed with Wilczak's assessment.

At issue is whether DMI will provide users with a consistent systems management interface across all major desktop and server operating systems—including Microsoft's Windows 95, the next installment of Windows—or whether Microsoft will support DMI only minimally while pushing its own proprietary approach. That approach is based on its Registry database and plug-and-play interface.

Support is there

DMTF Chairman Shannon Gray-Voigt said other operating system vendors, including SunSoft, Inc., Novell and IBM, all support DMI in its entirety.

Microsoft, however, denies the charge-

es. Rich Barth, product manager for Microsoft's Systems Management Server (SMS), said, "We're not only not backing away from DMI, we're totally behind it." He added that SMS is based on DMTF standards and that Microsoft is incorporating the DMI management interface into the first version of Windows 95.

"If Microsoft is less than complete in their implementation of DMI, it would be extremely negative for large user organizations," said James Herman, a vice president at Northeast Consulting Resources in Boston.

Working it out

"On platforms where plug and play exists, we are using existing plug-and-play drivers developed by third parties" rather than developing new drivers purely for DMI, Barth said, adding that this will help Microsoft get DMI support to market faster. He said the third-party drivers will provide the same functionality as the DMI component interface, which "is a great solution for platforms that don't have plug and play."

Gray-Voigt said the DMTF intends to work with Microsoft to resolve questions raised about the company's DMI implementation and then "come to the industry by the end of this year with a statement" that will dispel the confusion. Barth said once the DMTF completes its software management information file standards, Microsoft does plan to include DMI instrumentation in future versions of Word, Excel and other applications.



Bell takes pole position in Pentium race



Erin Allen (left) of the National Center for Children, and Michael Gray-Voigt (right) at child cook-off booth in benefit children Microgrants sponsored

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Gupta set to jazz up low-key image

By Kim S. Nash

Gupta Corp. is in the throes of a costly middle crisis. The 10-year-old company is trying to remake itself into a high-volume, high-growth tools mover. But first, it must cast off its image as a quiet vendor that sells application development tools

methodically through a direct sales force.

In the process, Gupta, based in Menlo Park, Calif., has posted \$17.7 million in losses for the past two quarters. Company officials, citing Securities and Exchange Commission rules against making financial predictions, were cagey

about when Gupta will move into the black again.

While no one argues that relentless competition from Powersoft Corp. has forced Gupta to try the makeover, users and analysts were split over whether Sybase, Inc.'s \$840 million acquisition of Powersoft last week puts Gupta in better

stead (see story cover 1).

Although Chief Executive Officer Umang Gupta maintains that the deal "effectively removes Powersoft as a competitor," others do not see it that way.

Steep quarterly losses mean "Gupta was already perceived as being weak," said Aaron Zornes, a senior vice president at Meta

Nepe, not us

Gupta CEO Umang Gupta declined to comment on the possibility that Oracle Corp. may renew attempts to acquire Gupta after Sybase's merger with Powersoft last week. But Dennis Moore, vice president of tech product marketing at Oracle, said he does not think it will happen. "Gupta is in serious trouble financially," Moore said. "I don't see who would buy them."

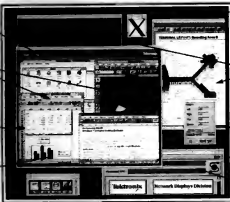
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Really big plans

Gupta's goal is to upgrade at least 10% of the estimated 90,000 Solo users in a sales cycle of 120 days or less. No figures are available on the rate at which takers of the Solo freebie have subsequently spent money on related Gupta products, said Paul Bender, vice president of corporate marketing at Gupta.

The delivery early next year of major new versions of Gupta's key products, SQLWindows 5.1 and SQLBase 6.0, should improve the situation, said Rob Lee, a programmer/analyst at Illinois Power Co. in Decatur, Ill.

The utility, which has bought 50 developer's SQLWindows licenses — an estimated \$100,000 worth of products — has built close to 40 applications with Gupta tools. "I know that we and other users are looking for even more advanced functionality in the upgrades," Lee said. The ability to split, or partition, application logic among clients and servers is No. 1 on Lee's list, he said.

First-half 1995 is when Gupta should have reversed its sales stream from 80% direct/20% indirect to 25% direct/75% indirect, CEO Gupta said.

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Oracle delays management tools rollout

By Kim S. Nash

Oracle Corp. missed its summer deadline for the beta version of a set of database management utilities that would let users more easily troubleshoot and correct problems with Oracle 7 systems on a Hewlett-Packard Co. OpenView network. John Pilat, vice president of Oracle's

HP products division, acknowledged last week that although some integrated utilities were demonstrated at its annual users conference in September, putting out a finished product "is going to take a little longer than we thought."

The goal of the April pact to link Oracle Server Manager to OpenView was to let Oracle users track network activity at

both application and database levels from a single OpenView management console. But Oracle users antsy for such streamlined systems monitoring products will have to wait until the first half of next year for the software, Pilat said. Indecision at both Oracle and HP about which version of Oracle will support which revision of OpenView has delayed

ship dates by at least six months, Pilat said.

Although Pilat declined to comment on possible technical difficulties in getting the products to work together, the delay came as no surprise to users.

"No kidding it's hard. That's why we've been wanting vendors to get together on this stuff in the first place," said the information systems director at a major food distributor in Tennessee, who requested anonymity.



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Who's on first?

A sampling of initiatives between database makers and network or systems management companies

COMPANY	PROMISE
Oracle	Build Ingres interfaces into OS/390.
HP	Allow monitoring of Oracle 7 from a single HP OpenView console.
IBM	Build a shell to run on top of Tivoli's Management Environment to track network events that affect SQL Server performance.

The first half of next year is also Oracle's target to ship Version 7.2 of its flagship database. An incremental 7.1 release expected before March "probably will contain beta" versions of the planned OpenView features, Pilat said.

Direct line

Third-party companies such as BMC Software, Inc. and Compuware Corp. offer management products that run on OpenView and view the Oracle 7 database. But some users said they would prefer to get that functionality directly from Oracle.

"You just know it's a lot more integrated when it comes to the more complex database features, like stored procedures," which every database does differently, said Kevin Loney, a corporate database administrator at Astra/Merck, a Wayne, Pa., joint venture partly owned by pharmaceutical firm Merck & Co.

In the meantime, Astra/Merck has resorted to rolling its own OpenView-to-Oracle systems management as specific functions are needed, Loney said. Even so, the firm's busy IT staff lacks the time "to do systems management thoroughly," he said.

Loney said that in an ideal world, he would have a utility that would tell him via a beeper message whether a given database was up down and then automatically take action according to a set of predefined conditions and "if/then" statements.

"The whole point of having systems management is to establish control and beyond that control, take an action," Loney said. "We don't have that now. After Oracle gets the product out the door, it plans to add more sophisticated OpenView integration, Pilat said. For example, Oracle has designs on melding database administration features with OpenView's core operations center."

Vendor scalability goals outstrip need. See page 57.

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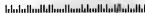
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Internet providers step up offerings

By Ellis Brouk

Internet access providers are sprouting up faster than pop plants in a college dorm.

To keep pace with an accelerating interest in the Internet among corporations and individuals, a rafting industry has emerged. The number of companies selling Internet connectivity doubled in the past year to more than 200.

The stiffer competition has, in turn, sparked appealing discounts. But analysts warn of an inevitable shakeout, as they seek your provider's productivity. While today's market for commercial Internet access services is worth roughly \$100 million, it is projected to swell to \$1 billion by the end of 1996.

A varied clientele

The new players range from well-established firms with European satellite offices to regional providers in "home brew" access providers. This third category is more difficult to track than pot patches in Dunell Boone National Forest, said Garrett N. Ray, an Internet consultant in Newton, Mass.

As commercial customers begin examining the various options springing up around them, industry observers said they are looking for stable, professionally run businesses rather than discounts. Accord-

ing to Jay Batson, a senior analyst in the network strategy service at Forrester Research, Inc. in Cambridge, Mass., users are also asking some key questions, such as, "Can I trust this company? Will it be around long term? Do they have a seven-day [or 24-hour] operation? Do they understand my business?"

This caution is echoed by Alan Taffel, vice president of marketing at UNET Technologies, Inc. in Falls Church, Va., one of the country's first commercial access providers. "It'll soon become apparent to the business market that not all [access providers] are created equal," Taffel said.

While somewhat self-serving, Taffel's advice is well taken. Once a company evolves from seeing the Internet as an exploratory wonderland to a business franchise, it will want a guaranteed level of service and technical representatives available over the weekend.

Founded in 1987, UNET claims about 3,500 customers, many of whom are business sites linked with dedicated 56K bit/sec lines over UNET's 45M bit/sec backbone. Those shopping for a provider need to ask about service guarantees and support policies, Taffel recommended.

Batson, for one, said he predicts "a huge shakeout" in the access provider arena and cited one causal event. The end of public funding for the Internet's backbone, the

NSFnet, in April of next year.

Most at risk, Batson said, are regional providers, such as i4BNet in Stamford, Conn., and SRI/Net in San Diego, which historically served as regional hubs at the end point of the expensive, high-capacity lines of the National Science Foundation's NSFnet backbone. "Either they'll have to become a national or be bought out by a national," he said. "When the free backbone goes away, their profit margin shrinks away."

Market on the move

Still, most observers think the market for individual accounts — generally offering slower speed dial-up connections — will continue to be crowded, dynamic and enthusiastic for a while.

One differentiator at this level may be integrated Services Digital Network (ISDN) support. More than a few Internet watchers think ISDN will revolutionize the dial-up side of the market and make graphical browsers for the Internet such as Mosaic more than a sluggish novelty for dial-up callers.

UNET, for instance, says its nationwide ISDN service early next year calls for pricing 64K bit/sec access at around what it sells 14.4K bit/sec access for today.

County adopts Internet system. See page 57.

Dialing in

How do you find an Internet access provider in your neighborhood?

Try Pdial, a public service list of worldwide Internet access providers. The list was compiled by Peter Kaminski, who now works at San Jose, Calif.-based Internet provider Netcom Online Communications Services, Inc.

The first version of Pdial was released about 2½ years ago, and Kaminski plans an updated list in December.

Pdial is available the following two ways:

• A anonymous file transfer protocol at ftp.netcom.com/pub/info-dial/public-access/pdial

• Electronic mail by sending a message to info-dial-server@netcom.com and put the words "send pdial" in either the subject field or body of the message.

Fault-tolerant systems

Sequoia reneges on deal with Digital

By Mary Brandel

Following two months of negotiations, Sequoia Systems, Inc. has decided not to buy Digital Equipment Corp.'s fault-tolerant business.

But Sequoia, a \$44 million manufacturer of Unix-based fault-tolerant systems, has signed other deals intended to ex-

pand its business, including the following:

• With Toshiba Corp., it is developing a PowerPC-based fault-tolerant system, which is slated to be available in late 1996.

• It is supplying fault-tolerant technology for a future version of Novell, Inc.'s UnixWare operating system.

• It just signed a definitive agreement to merge with Texas Microsystems, Inc. in an all-stock transaction. The Houston-based firm makes systems designed for harsh industrial and commercial environments, such as ruggedized PCs for the petrochemical and steel industries.

"Because fault tolerance has always been a niche type of market, they have to be able to broaden the scope of customers that they can sell to," said Steve Josselyn, an analyst at International Data Corp. (IDC) in Framingham, Mass. Sequoia currently owns just 1.3% of the fault-tolerant arena.

Double the money

The Texas Microsystems merger gives Sequoia a low-end to midrange suite of fault-tolerant computer offerings, according to Larry Leithman, an associate at Bradstreet Associates in Fort Lee, N.J., which advised Sequoia in the merger.

The merger will also double Sequoia's revenue this year, bringing it to \$80 million. However, Sequoia is still quite a bit smaller than competitors Stratus Computer, Inc. and Tandem Computer Co., which post revenue of \$513.7 million and \$2.1 billion, respectively.

But with \$18.9 million in cash and

Back in the black

Sequoia may have stemmed its revenue slide with increased year-over-year revenue in 1994.

Revenue	Profit/Loss
1992 ≈ (\$2.6M)	1992 ≈ \$3.9M
1993 ≈ (\$1M)	1993 ≈ \$3.1M
1994 ≈ (\$1.8M)	1994 ≈ \$8.6M

equivalents, Sequoia sees fiscal 1995 as a "year of investment," according to Dick Goldman, chief financial officer. Research and development expenditures are slated in to be a fairly hefty 18% to 20% of sales.

This stands in contrast to the previous three years at Sequoia, which were marked by strict cost controls. After restating its financials in 1991 and 1992, the Securities and Exchange Commission launched an investigation. And between 1992 and 1993, the company lost \$35 million, including a restructuring charge.

In fiscal 1994, cost cutting resulted in Sequoia's first profit since 1991, at \$8 million. It also increased revenue by 9% (see chart) since 1993.

"It looks as though they've started to turn a corner," Josselyn said.

Getting out while the getting's good

With its fault-tolerant business left standing at the altar, Digital last week said it will exit that market rather than seek another suitor.

The company will deliver an "end of life plan" for the tiny installed base of VAX customers. At the end of 1993, there were just 600 VAX systems installed, according to IDC.

Customers will be advised to either move to Alpha AXP-based clustered systems or seek alternative fault-tolerant technology outside Digital. Plans for an Alpha AXP-based Unix fault-tolerant system have also been scrapped.

"I don't think it would be a big sur-

prise" to customers, said Steve Josselyn, an analyst at IDC. "Over the past two years, Digital has been real active about [fault-tolerant] development."

In August, Sequoia signed a memorandum of understanding to purchase Digital's Unix-based fault-tolerance technology. However, a Sequoia spokesman last week said "a whole slew of items" such as development schedules, royalties and warranties led to the deal's cancellation.

Part of the problem, he confirmed, was that the resources required to complete the system did not match the expected revenue from Digital's suggested joint-marketing plan.

—Mary Brandel

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Computer industry

Briefs

IBM, Seagate settle
IBM settled its trade secret lawsuit against Seagate Technology, Inc. filed with the U.S. District Court in St. Paul, Minn. The terms of the settlement are confidential. According to Seagate, the case involved an ex-IBM employee who joined Seagate's magnetic-resistive heads operation.

Oracle's Miner dies
Oracle Corp. co-founder Robert Miner died Nov. 11 of cancer. Miner, 51, led the development of Oracle's flagship database from 1977 until 1982, when he took charge of a small advanced technology group at the company.

Digital lifts freeze
Digital Equipment Corp. lifted its six-month salary freeze early this month. Chief Executive Officer Robert Palmer had promised to do so if the second quarter, ending in December, were profitable. While profitability is not a "certainty," Palmer told employees in a taped presentation that he expects the company to at least break even.

KnowledgeWare slips
KnowledgeWare, Inc. last week reported a loss of \$15.8 million for its first quarter of fiscal 1995 compared with a profit of \$1.4 million for the same period last year. Sales were \$21.5 million, down from \$30.2 million in the first quarter of 1994. The results included \$6.2 million in operations restructuring charges in July. The quarter ended Sept. 30.

Capion group merges
Red Capion, co-founder and CEO of Capion Computer Group, and founder of Insurance Management Group, has merged Insurance with Avant, a Calgary, Alberta, information systems company. The result is Insurance Technology Corp., which will promote the Open Systems Software Factory method.

Can't start a fire without a spark

Start-up Wildfire pins hopes on digital secretary

By Michael Fitzgerald
LEXINGTON, MASS.

Wildfire Communications, Inc., a telecommunications software maker founded in 1992, has 23 employees, one Asteroids arcade game and two dogs.

The arcade game gives the engineers a way to vent their aggressions, and the dogs have been key to helping staff stay calm amid intense pressure, says co-founder Bill Warner, only half-kidding.

Warner is an Apollo Computer alumnus who went on to cofound Avid Technology, Inc., a red-hot digital editing company in Tewksbury, Mass., whose systems have been used to edit movies such as *True Lies*. Warner's idea for Wildfire came while he was at Avid, casting about for an idea for a low-end video product. At about that time, he got a cellular phone.

"No one knows where you are and how to get in you, and you may not know your [cellular] phone number," Warner said. Having read an article in which CNN founder Ted Turner said "don't bother setting small goals," Warner said he "decided to make the most popular software ever made."

Warner's product, Wildfire, would be a sort of digital secretary that handles all of a user's incoming and outgoing phone

calls, whether he is at his desk or a pay phone [CW, Oct. 10]. Warner's hope was that the product's popularity would spread, of course, like wildfire.

The flammability of the market will soon be tested, as Warner and co-founder Nicholas D'Arbelloff near shipment of their first product.

Andrew Marcovitz, a general partner at



Wildfire Communications' Bill Warner keeps a calming influence close at hand

Boston venture capitalist Matrix Partners, was Wildfire's first investor. He said he was brought into the concept because "I see this as a stage in the evolution of computing... to where computers disappear altogether." The Wildfire device, which is based on an Intel Corp. Pentium-based server, is a small step in this direction, he said.

Quite a slicked

Still, it may be some time before people start putting their Wildfire numbers on business cards: The product is pricey, at \$40,000 to \$70,000 for a department.

Warner and Marcovitz said in separate interviews that the company must bring down prices and decide whether their next product will be a high-end, high-cost machine targeting cellular carriers and regional Bell operating companies or a low-end, consumer-oriented device.

Technology may help make the choice because Wildfire uses voice recognition and telecommunications add-in boards, both of which are on a declining cost curve.

The software must also evolve. Robert Womack, director of computer services at Wildfire beta site Hale and Dorr, a large Boston law firm, said he is looking seriously at buying a Wildfire system but wants assurances that a solid billing component will be added in a timely fashion.

Warner said billing will be built into the next version.

D&B Software thinks big in reorganization

Mainframe products to get their own division

By Rosemary Cadusso

The last word most client/server software companies will spend these days is mainframe.

But mainframes were a topic of choice last week for Douglas MacIntyre, the new chief at Don & Bradstreet Software.

MacIntyre confirmed that the \$400 million Atlanta company — one of the first mainframe software firms to make a big push for client/server — is reorganizing to re-emphasize its mainframe business and make it as equal but separate business unit alongside its client/server effort.

D&B Software has previously functioned as one software concern, developing, selling and supporting mainframe and client/server software. That meant the sales force and support staff were responsible for two very different product lines, an arrangement that sometimes resulted in a muddled message.

Now, mainframe customers will deal with dedicated mainframe staffers, and client/server users will work only with members of the SmartStream division.

"We spent a lot of energy working on cli-

ent/server solutions," MacIntyre said. "There's probably been more attention given to client/server, so what we are doing is creating a division dedicated to the mainframe customer base." Company officials

said they hope this change will not only provide an old-line customer base with better service but will enable the new client/server business to react more sharply to competition.

"If I were a mainframe customer, I would be more comfortable," said Clare Gillen, an analyst at International Data Corp. in Framingham, Mass. "It does make more sense. The objectives of the dedicated divisions will be different."

D&B Software does not release mainframe-only revenue, but the company has a customer base of close to 10,000.

"We are still totally mainframe," said Susan Veal, manager of financial accounting systems at First Colony Life Insurance Co. in Lynchburg, Va. "We do have [client/server] plans for the future, but it is probably

not feasible for at least two or three years. I think D&B is finding this with a lot of clients. We were told that they were going to start focusing again on the mainframe."

"This is excellent," said Bobby Cameron, a senior analyst at Forrester Research, Inc. in Cambridge, Mass.

MacIntyre said the mainframe business is support and maintenance. That's a no-brainer. It's in the \$200 million range in revenue, Cameron added. "In the client/server world, this is new stuff where they are truly entrepreneurial. They have to be aggressive in the market, with a whole new set of skills."

MacIntyre stepped in as chief executive this summer when previous D&B Software President Hank Holland resigned. The change came in time when D&B Software had fallen well behind rivals SAP America, Inc. and Oracle Corp. in the client/server market. While SAP and Oracle claim to have client/server customer bases in the 2,000 range, D&B Software has about 550 customers in that area.

D&B Software's Douglas MacIntyre seeks to better serve mainframe users



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META Group, February 1994 Client Survey

“More than 90 percent of our Fortune 2000 clients indicate they will be pursuing a data warehouse strategy in the next three years.”

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W.M. James, "Building the Data Warehouse"

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Back in the 15th century, this was a generally accepted view of Hell. Today, of course, we can

see how inaccurate it really is. Not one person, for instance, is shown trying to manage a corporation's distributed systems. You can probably forgive the artist for this oversight. But you may be wondering when someone will deliver the management software that can help you take care of this mess. At Legent, being that someone is what we're all about. And so far, our efforts have resulted in the most extensive set of industrial-strength, distributed systems management tools available. We've also developed an open architecture called XPE that we think is pretty remarkable (some of the toughest analysts in the industry tend to agree). XPE lets our software work together across almost anything you can wire together, regardless of function or platform, from mainframes to UNIX workstations to PC LANs. Which means you can manage your distributed systems from the platform of your choice, something our customers tell us has definitely made their lives easier. Is it Paradise? No, not yet. But we can promise you one thing: It's a lot better than where you are right now.

Trial and error

Now this, from the front page of *USA Today* last Tuesday: "In cyberspace, where surfing and flaming take place with Wild West abandon, a new word threatens to tame the exuberance: lawyering."

The same day, there were numerous reports about Bill Gates' presentation on Microsoft's proposed on-line network (which no doubt will be "cool"). In his announcement, Gates was forced to address the legal battle he will inevitably fight to launch the service. It's very likely the legal eagles are going to cite the on-line network proposal, along with Microsoft's previously announced intention to purchase Inet, as further proof of the monopolistic activities of the Evil Empire of the Northwest.

It could be said that we should be thankful for the legal community's efforts to protect us from the holy terror of competition. But we won't say that here. Instead, let's reflect a bit on the realities of the information technology marketplace and how these realities continue to render the assaults on competition impotent, though no less lucrative for lawyers.

There is no such thing as a competitive advantage that is any more lasting or sustainable than the beautifully colored autumn leaves. One vendor's advantages all blow away in due time. New growth returns only if the corporate tree has been properly cared for and nourished.

In the case of Microsoft, the company's future depends to a great extent on its ability to eclipse its 16-bit Windows product with a 32-bit operating system that sustains its customers' software investments and doesn't produce high retraining costs. If Microsoft fails, then power shifts to IBM's OS/2 and to Unix as well. It's really that simple.

Think of IBM's "monopoly" on large systems, wherein it owned 70% of the worldwide market for mainframes and about 90% of the operating system market when the government launched a fruitless, 12-year antitrust battle with the company in 1969. IBM's mainframe market share numbers today are still about the same, give or take a bit. But what happened to the market? Why is no one clamoring about antitrust measures against Big Blue?

Because the market changed radically, and all the king's horses and all the king's men could do nothing to stem the market forces of customer demand. Though still critical to corporate-style computing, mainframes account for a fraction of total systems spending.

Look at General Electric, which is led by Jack Welch, a tenacious CEO who demands that GE be No. 1 or No. 2 in every market in which it competes. Along the way, it shareholders — and, most importantly, its customers — benefit tremendously. The computer industry should be held to some separate values that would make it right to be No. 1 or No. 1, anything less than what it is: good for customers.

Bill Laberin

Bill Laberin, Editor in Chief
Internet: blabin@excite.com



Objective-C could be a contender

"Object developers should think Small" [CW, Nov. 7] leaves out Objective-C as a contender for the top ranks of object-oriented languages.

Objective-C has many of the advantages claimed for Smalltalk: inheritance, polymorphism and a dynamic runtime system. Programmers familiar with Smalltalk would have little trouble moving to Objective-C and vice versa.

Objective-C differs from Smalltalk in not always providing access to all the source code and, in current incarnations, not being object-oriented from top to bottom. But that's for another debate. Several major client/server players have implicitly committed to Objective-C as the underpinning of their object-based systems. OpenStep, pioneered by Next Computer, has been endorsed by Sun Microsystems, Hewlett-Packard and Digital. Recent rumblings of OpenStep on Windows NT would only further endorse Objective-C as a contender.

Henry McGilton
Trillitikon Software
Los Altos, Calif.

Responses to 'Gays at home' draw fire

It seems that what prompted objections from a few readers to "Gays at home in high tech" [CW, Sept. 28] was not the person(s) aspect of the story but the people covered. Those same readers weren't bothered by earlier arti-

cles about upward mobility, job recognition, glass ceilings, etc., with respect to women, blacks, Asians, non-English-speaking programmers, etc. Apparently, what annoyed some readers was not the article itself but what was inside it: the news that employers are starting to treat gays and lesbians fairly.

Any reader who objects to the article only because it covers a specific social group doesn't understand that the principles of tolerance, fairness and liberty are supposed to be for everyone. Even if some readers didn't like the news, the story was legitimate, and your coverage is applauded.

Ned Flaherty
Boston

I strongly disagree with reader Harry Krabbe, who wrote "I'm sure gays have their social clubs to support their deviant lifestyle, but I don't care to read about it in a publication I'm paying for." [Letters to the editor, Oct. 31]. That attitude exemplifies why such articles need to be published. Discrimination or social ostracism of any computer professionals for whatever reason warrants coverage in *Computerworld*.

Putting blinders on may make Mr. Krabbe feel more comfortable, but that will not change the truth: that a significant fraction of the people we all live and work with has a sexual orientation different from our own.

As far as my subscription goes, I'm willing to extend it for a year to make up for Mr. Krabbe's encroachment. I, for one, am not afraid to read the truth in your excellent publication.

Markus Pelt-Layman
Longmont, Colo.

A bit in error

You should be a little more careful in checking bits vs. bytes. In the Oct. 31 issue, you made the same mistake twice — in "Computers second on list for speedy interface" and in Inside Lines. Proposed standard 1384, called FireWire by Apple, operates at 100M, 200M or 400M bps/sec. The other interfaces listed in the table, however, are all measured in M bytes per second. Using the same units for both makes the comparison entirely different.

FireWire has a lot of technical advantages over SCSI or SCSI-2, including lower cabling costs and ease of installation, but it does not have a speed advantage until you get to 200M bps/sec or higher. Also, SCSI-3 products will be available next year running at 1,000 bps/sec.

David B. Tuttle
Chief Engineer
Augment Systems, Inc.
Bedford, Mass.



Computerworld welcomes comments from its readers. Letters may be edited and should be addressed to Bill Laberin, Editor in Chief, Computerworld, P.O. Box 9174, 375 Calhoun Road, Framingham, Mass. 01901. Fax number: (508) 875-8933; Internet: letters@cw.com. Please include an address and phone number for verification.

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Viewpoint

No need to fear the Year 2000

Michael B. Cohn

Is anything already? Enough about the cataclysmic Year 2000. Dates recycling to 01/01/00? Systems erasing right and left? What do you think we are, a bunch of morons?

Sure, there was a time when we took three copies to enter a heading. But today we're seasoned, competent and, perhaps, somewhat underpaid professionals. Date fields are passed with flying colors. Date fields are passed with flying colors. The only exception was Leap Year '72 when we shut the system off for a day and had everyone stay home.

Fear not the next millennium. It pales when compared with the major modifications we wrestle with today. If you want to talk about some really scary changes, think about these: Dollars-annoying fields. Every bank in America is bracing for the day when they will have to expand account balance fields by a few digits to accommodate the growing national debt or Bill Gates' checking account.

The nine-digit ZIP code. Did we panic? No, we handled it. Today, I bet every major system is equipped for the nine-digit ZIP... every system. The only exception was Leap Year '72 when we shut the system off for a day and had everyone stay home.

Phone numbers. There used to be just a few million phones. Numbers totaled 10 digits... plenty to choose from. Then one day we wake up and every American has a home, work, fax

and cell phone. Do the math, folks. We're about to run out of numbers. We'll fix it and not by expanding to 11 digits. That software nightmare would have us working overtime until the jets win the Super Bowl. Let's just add a key, like the @ or something. What's wrong with 887-@300? Internet users would love it. But retrofitting every phone might be a little tricky, especially the rotary dial I have in the basement. But that's hardware and not our problem.

Metric. Programmers unite! Fight this metric thing. If it ever catches on in the U.S., we're toast. We couldn't even estimate the modifications, let alone figure out how many feet there are in a liter. That's why we advocate the 7-Eleven Standard: 8/4/1. That stands for Short/Medium/Long. Some More/Lots or whatever you want. It takes just one byte, eliminates the cent/milli/kilo stuff and seems much closer than remembering how many cups there are in a quart.

Social Security numbers. I don't know what happened to birth control, but we're running out of Social Security numbers. Expanding to 10 digits is on it: it would take more than

two years to redo every tax form. Then again, if the IRS wants to lay low until 1997, I wouldn't object. Our solution is to change the all-digit Social Security numbers to alphanumeric—allow numbers and letters. I don't see any downside, unless they came up with nonsensical pseudo-social Security numbers that made an "RUAQTE" become plain every mid-Time. No one has to think about things like this but us. Thanks to global systems, nationalized banking and electronic data interchange, time fields are becoming a problem. It's 2 a.m. in Trenton, N.J., but still yesterday in Eugene, Ore. Post the interest? Is the payment late? Does California lose a day's pay if I ruin payroll?

It's late, I'm tired, this project can wait until tomorrow. But for someone, somewhere, it is tomorrow. With that kind of head start, I hope he comes up with something or at least lets me know if I'll need an umbrella.

Cohn is author of the humor book *Fear of Computers* and is trying to lay low until the Year 2000 at a large high-tech company.

Let the NII grow naturally

Esther Dyson

What is the best way to think about the emerging National Information Infrastructure (NII)? Or better yet, about the global information infrastructure? The superhighway metaphor doesn't really fit the bill—starting with the notion that government should build it. Much of the infrastructure exists already; all we need are

People think of Darwinian evolution as a nasty process that results in a couple of monopolistic winners and a host of losers, but the reality is more complex. Evolution leads to a diversity of species and forces companies to differentiate and become better at their chosen models. Specifically, we'll have businesses dominated both on TV and the Internet; we'll have text services and multimedia; we'll have payment by advertisers and user-pays; we'll have transaction fees and time charges. But we'll have competitive, evolved forms of each and some notions that will disappear.

Like the environment, the NII ecosystem is a robust, self-healing environment that can be harmed by human misbehavior. But it will take a lot to destroy it. Similarly, it too contains humans and can be a good place for them, but it may also be unfriendly, dangerous and confusing. There should be different neighborhoods with different rules: family-oriented, teen-oriented, commercially oriented, even hangouts for lawyers. The nice thing about cyberspace is it's easy to move

from neighborhood to neighborhood.

There is a place for government and laws, but it's a limited role. Specifically, as much government as possible should be local—for virtual communities rather than geographical ones. But we bet those who try to apply their laws to other communities. Cyberspace law as a whole should simply try to keep communities and individuals within those communities from harming other communities.

Finally, the NII ecosystem is not yet well understood. Just as people of good intentions argue about the best way to deal with forest fires—whether they are nature's way of maintaining itself or disasters to be controlled—so too will people argue about the best way to handle the "forest fires" of the NII. Should we try to eradicate all viruses to keep ourselves safe or should we tolerate them as a little so we maintain an immune system and people get used to safe computing practices? Should we encrypt everything, outlaw encryption or just let levels of practice and standards evolve?

The answer is we don't know. The wonder of an ecosystem is that it tolerates a lot of experiments and usually lets the best answers win—if we let it.

Dyson is president of E-venture Holdings, Inc. in New York. She welcomes readers' thoughts and can be reached on the Internet at edyson@e-vent.org.

The growth of the national information infrastructure will be a natural process.



The key word is hidden in what I just said: natural. The growth of the NII will be a natural process, and the best metaphor is an ecosystem—a self-organizing environment containing a host of co-evolving species.

What does the metaphor tell us? First of all, it says a lot of this will happen by itself. Second, there will be more than one business model

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Multimedia on the chip equals savings for users

By Jaitamur Vijayan

Two efforts to run tasks directly on the CPU chip instead of on a separate processor could cause a rapid proliferation of multimedia on the desktop next year, observers say.

Intel Corp., along with digital signal processor (DSP) software vendor Spectro Microsystems, Inc., recently announced the availability of Intel Architecture SPOX (IA-SPOX). It is a real-time kernel and development environment that will enable signal processing tasks to run directly on the Pentium processor.

For users, the migration of these high-end functions to the processor could mean significant savings to costs associated with add-in DSP boards and cards.

Multimedia catalyst

Multimedia functions such as full-motion video, integrated data communications and telephony which have begun to multiply in the market, are driving the need for on-chip-signal processing capabilities, according to David Schuler, a marketing manager at Intel's architecture development laboratory.

"Multimedia software, particularly telephone management products, will proliferate to 1995 as a result of the introduction of DSP functionality in the mainstream PC," predicted Martin Reynolds, an analyst at Computer Intelligence InfoCorp in Capertown, Calif.

"The cost of the hardware required to enable these features will be sufficiently low so as to leave no option but to include it," he said.

Correctly, these capabilities are packed in

separate DSPs that provide a wide variety of functions, including audio and video compression and decompression, data and fax communications, telephony and storage.

Until now, developers of Windows-based multimedia applications have had to off-load the real-time, compute-intensive multimedia portions of their applications to these separate DSPs.

Increased functionality

However, analysts said processors such as the Pentium and the PowerPC now have the level of performance to deliver DSP functions without a separate DSP. Full multimedia functionality can be harnessed from the hardware using the appropriate software, a 16-bit coder/decoder and a telephone interface.

For instance, with these hardware additions and the IA-SPOX operating system, multimedia functions run directly on software on the Pentium system. Intel calls this capability Intel Native Signal Processing.

"Signal processing software can extend multimedia system functionality in applications such as voice synthesis and speech recognition," said Brad Pinks, multimedia marketing manager at Crystal Semiconductor, a component manufacturer.

However, Intel 486-based systems do not have the additional horsepower to run multimedia applications and will still require dedicated DSPs to harness their features.

The added functionality could have a down-

Multimedia, page 49



Suite developers wooed by vendors

By William Brundell

Once upon a time in the software industry, vendors tried to get developers to build applications for their platforms much like politicians try to win votes. They did not care who votes; they just want the highest tally.

booming what kind of applications and developers they want to offer users of their application suites.

In wooing development for suites, vendors are chasing the question from "how many" to "what kind of" third-party applications. The result is significant for users, whose suite decisions

are no longer framed by which vendor has the most muscle to generate third-party development for their suites.

Better choices

More importantly, users will be able to compare suites based on what kind of applications run under them instead of

Courtship		
Vendors are hoping to woo suite development with the following programs:		
Vendor	Suite	Program
Microsoft	Office	Office Compatible
Lotus	SmartSuite, Notes	Business, Personal, Professional Developments
WordPerfect	WordPerfect	WordPerfect, Perfect

Now, instead of promoting development only for operating environments such as DOS or Windows, vendors are pulling for the development of applications or add-on apps to run in conjunction with their application suites.

Much as candidates target a political message at a political constituency, the major PC software vendors — Microsoft Corp., Lotus Development Corp. and WordPerfect, the Novell, Inc. Applications Group — have spent the autumn

lining up four or five bundled applications against one another.

"By approaching suites from this perspective, users will be able to leverage more dollars out of their suite purchases," said Karl Wong, principal analyst of workgroup software at Dataquest, Inc., a San Jose, Calif.-based market research firm.

Add-on apps offer other benefits to users. For starters, apps tend to cost a fraction of a

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MONITORS



IBM's voice system carves out user niche

By Thomas Hoffman

If the positive market acceptance of IBM's OS/2-based voice recognition systems is any indication, then the company's recent introduction of a Windows-based product should be equally appealing to doctors, lawyers and other professionals accustomed to working in Microsoft Corp.'s graphical user interface environment.

Last January, IBM began shipping an OS/2 version of its Personal Dictation System, a PC-based speech recognition system capable of identifying 32,000 words at a rate of 70 to 100 words per minute that costs less than \$1,000. Earlier this month, IBM changed the brand name to VoiceType Dictation and began marketing a similarly priced Windows-based system. It also unveiled PCMCIA and Micro Channel Architecture cards that allow mobile professionals to use the software with their IBM PC or ThinkPad laptop computers.

IBM's VoiceType Dictation for OS/2 systems has found a solid niche among doctors, lawyers and other professionals who were either engaged in high-volume word processing or cannot use a keyboard due to physical disability.

High praise

For example, David McFarland, a former Housatonic, is product manager who retired 20 years ago after his battle with multiple sclerosis rendered him a quadriplegic, has been using the OS/2-based system to run a computer bulletin board from his home in Monroe, Conn., since February. McFarland, who has used a variety of speech recognition systems for the past 10 years, said IBM's VoiceType Dictation product is the best he has ever used.

"For straight keyboard replacement, IBM's system is light-years ahead — and I'm no great fan of IBM," McFarland said.

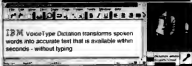
Unlike most speech recognition systems, which often have trouble understanding dialects, the IBM system can be trained to recognize users' accents and speaking patterns. Users must first train the system to understand their pronunciation by reading a Mark Twain short story for 60 minutes. Each time the system is used thereafter, it continues to learn how to interpret the user's speech.

The VoiceType Dictation systems boast a 97% accuracy rate, according to Howard A. Fields, director of marketing at IBM's Speech & Pen Products division.

The IBM systems also rely on trigram technology, which enables them to statistically predict what the third word in a phrase will be based on user speech patterns. That helps accelerate the recognition of like-sounding words

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IBM's VoiceType Dictation systems boast a 97% average word rate

such as "in," "two" and "too."

The system has been a boon for doctors such as Ted Filer, a plastic and hand surgeon in Effingham, Ill., who has been using the OS/2 system since August to generate progress notes for surgeries he has performed. Filer, a loyal OS/2 user who has no plans to migrate to Windows, said he plans to examine the new PCMCIA cards.

"Because I go to outlying clinics to visit patients, [the PCMCIA feature] would enable me to have a portable dictation system to do correspondence on the spot," Filer said.

Other OS/2 users planning to remain loyal to IBM's 32-bit operating system would like to see the company add other enhancements to their software, such as a wider variety of specialized vocabulary. For example, Dr. Paul White, a general surgeon at Beth Israel Hospital in New York who has used the OS/2 version since April, said IBM's emergency medicine vocabulary is not quite in sync with many words he is accustomed to using. "My system is about 30% accurate. If I was able to dictate words, [the system] would probably go a lot faster with fewer errors," White said. He added that he was otherwise satisfied with the software.

IBM's emergency medicine vocabulary is not quite in sync with many words he is accustomed to using. "My system is about 30% accurate. If I was able to dictate words, [the system] would probably go a lot faster with fewer errors," White said. He added that he was otherwise satisfied with the software.

costs of implementing multimedia directly on the process. "If we question it, we are expected to do more multitasking kinds of applications, will processor capability be impaired by the added DSP functionality?" Julian asked.

Voice apps edge into mainstream

By William Brundel

One day, you will be able to operate your desktop system simply by speaking it. Really.

With enabling technologies being brought to market by third-party vendors, many of the major vendors are starting to build voice recognition capabilities into at least their mainstream offerings. In fact, some products that run in the Windows and OS/2 environments have already found their way to users.

For example, Phil Terry, technical training specialist at Moody's Investor Service in New York, is using the Kurzweil Voice for Windows 1.2 from Kurzweil Applied Intelligence in Waltham, Mass., for all his data manipulation. Terry has epicondylitis, a carpal tunnel syndrome-like repetitive strain injury in his hands

"Because of all the trouble I've been having with my arms, I simply could not use a computer," Terry said. He uses the product for the mouse- and keyboard-activated commands he would otherwise perform with all his Windows applications.

More on the way

Other vendors are joining the fray. IBM is offering an OS/2-based system (see story at left). Meanwhile, desktop application makers such as WordPerfect, the Novell Applications Group, are building strategic alliances with a number of vendors to bring voice recognition capabilities to their applications suites. Microsoft Corp. is expected to deliver a voice recognition application programming interface that will run with Windows 95.

The enabling technologies will be made available from companies such as Kurzweil, Kovox Communications, Inc. in Toronto and Verbec Voice Systems in Edison, N.J., among others. Their technologies, when combined with audio cards, will bring voice recognition systems to general productivity applications such as Kurzweil, Kovox Communications, Inc. in Toronto and Verbec Voice Systems in Edison, N.J., among others. Their technologies, when combined with audio cards, will bring voice recognition systems to general productivity applications such as Kurzweil, Kovox Communications, Inc. in Toronto and Verbec Voice Systems in Edison, N.J., among others.

Like other enabling technologies, voice recognition is just beginning to gain acceptance as users find that the technology is

more than a novelty and is usable, said Mary Ann McCarthy, an analyst at "Voice Information Associates," a market researcher in Lexington, Mass. Moreover, as the price for the combined hardware and software falls to the commodity level, the technology becomes more likely to find its way to users' desktops, she said.

Product accessibility

For example, Digital Communications Associates, Inc. in Alpharetta, Ga., is bundling Verbec's voice recognition system with its Irma line of client connectivity products. The new line of voice-recognition-enabled products, called

Liases for Irma, will be bundled with the company's QuickApp and QuickPeer at no extra charge, beginning this month. Listen for Irma will be available in stand-alone mode for \$49 in the first quarter of next year.

As the introduction of Liases for Irma demonstrates, voice recognition products have come a long way toward the commodity price points in the desktop applications market. Industry selling for more than \$5,000 only two years ago, voice recognition packages that performed dictation and had the hardware board and the software to drive it can now be sold in packages for less than \$1,000, said Jackie Penn, an analyst at Gartner Group, Inc., a consultancy in Stamford, Conn.

Voice Information Associates predicted that the voice recognition market will hit \$647 million by 1997, up from \$150 million in 1992. However, the technology that will take the market to this kind of growth in the mainstream is not expected to hit the streets for another year, Penn said.

"Desktop systems still mimic mouse interfaces," Penn said. "And while these may save some users a second or so in time, they have yet to prove that they can cut the users' bottom line."

If Terry is any indication, the jury is still out on whether recognition will grow beyond a niche technology. "There is a growing recognition that voice recognition will be an important mode of input," he said. "[But] it's still not clear what role it will play in the rest of the company."

Multimedia

CONTINUED FROM PAGE 38

side, however, according to Ted Julian, an analyst at International Data Corp. in Framingham, Mass.

Despite the processing capabilities of the Pentium and PowerPC processors, the emergence of multitasking, multithreaded operating systems such as Windows 95 could task processor capability to the fullest, for instance.

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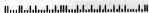
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Handheld operating systems

Geoworks revamp raises performance, lowers price

By Michael Fitzgerald

Like the Little Engine that Could, Geoworks, Inc. thinks it can get over the hill of being a tiny company in a desiccated market. The makers of handheld operating systems recently announced some initiatives that should put a little coal in its engine.

The company is hoping that its biggest drivers will fuel a strong future. These include Geos 2.1, a new version of its operating system for handhelds, and Geoworks Bindery, an authoring tool that may help spur development for the platform.

Geos is used on the Zometest personal digital assistant (PDA), which is marketed under different names by Tandy Corp. and Casio, Inc. Geoworks also has licensing agreements with Hewlett-Packard Co. and Novell, Inc.

A needed tool

Geoworks Bindery is a \$149 package that lets users build customized "books" oriented toward handheld products.

One analyst said Bindery is an important tool for Geoworks.

"Right now you really have to be into C to program for their device, so they need-

ed a tool like [this]," said Jeffrey Henning, an analyst at Constellation International in Norwell, Mass.

Meanwhile, Geos 2.1 now runs on less memory and uses an executive-in-place (XIP) technique that lets it switch between applications more rapidly. The speed of such switching has been a significant problem in the current release of the operating system. The XIP technique means Geos executes applications directly from ROM, rather than loading them into RAM. This lets them run in 500K bytes of RAM, down from 1M byte for the current version.

"With our target machine, you don't have a hard drive" to run software from, said Gordon Mayer, president and chief executive officer at Berkeley, Calif.-based Geoworks.

The reduced memory requirement and improved performance should pave the way for PDAs to be priced as low as \$300, which many analysts say they think is the price point needed to spur significant interest in the handheld market.

However, the company faces a struggle to make headway in a market that awaits Microsoft Corp.'s late At Work for Hand-

helds, also known as WinPad, which is due out in mid-1995.

Microsoft has a tough challenge with WinPad because their approach has been to start with Windows and scale it down," Mayer said. "There are very few things you can point to that are scalable downwards. Look at the auto industry: In the early '70s when the gas crisis hit, the first thing the U.S. automakers tried to do [was] scale down, and their early efforts were the Pinto and the Vega."

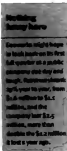
Pervasive influence

Still, Microsoft is Microsoft, and Mayer credits it with developing market awareness of handhelds.

"In a way, they've done us a big favor with the bulletinboard they've generated about At Work and WinPad — they've educated the OEMs, shown a vision and in many cases gotten OEMs to develop hardware platforms," Mayer said.

Still, the market for handhelds is tiny, and unlike Microsoft, Geoworks has nothing but handheld products to generate revenue.

In fact, the company had planned to announce products at its developers' conference. But it canceled the meeting because potential attendees said they wanted information on the new third-party hardware that will run applications, and Geoworks does not expect these products to be out until next year.



Developers

CONTINUED FROM PAGE 39

blown Windows application. Furthermore, because applets such as ShapeWare's Visio or Attachmate Corp.'s Extra connectivity tools were designed to run with the suite and not the operating system, they use no less system resources such as memory or storage.

This new raft of application development is very different from the free-for-all that was generated for Windows, where tens of thousands of applications were built to run in the Windows environment. Vendors are being more selective this time around, trying to garner only those applications or applets that will best exploit their suite's strengths.

So far, Microsoft has had 55 applications developed for its Office Compatible program, a fraction of the support it gained for Windows at the same point in that product's life cycle.

No restraining here

For users, applets' most significant benefit is tight integration with the respective suite's user interface. This reduces the need to train users to use the new application.

For example, Autodesk, Inc. is developing a version of its AutoCAD software for Microsoft's Office suite. Users will be able to simply load it into Office and run it using the same menus and almost all the same commands found in the Office suite.

The applications from which users will be able to choose will be reflective of the suite vendor's corporate strategy. Lotus wants to encourage more high-end, groupware-enabled, document-based applications for its suite. As a result, SmartSuite has benefited from development efforts for Notes. An example of this is EasWare Corp.'s development of Post Works, a network utility that ensures that formatted documents can be created and exchanged in both Notes and SmartSuite.

Do-it-yourself apps

Because WordPerfect's suite has not shipped yet, the applications that run with it are not available.

However, not all users are waiting for these add-on applications to be delivered. An increasing number are building these applets themselves.

"It would make sense that users would be interested in writing to these suites," said Jeff Barter, editor of "Soft Letter," a newsletter based in Watertown, Mass. "The end users are used to a certain interface, and the corporate developer would not have to build one for them from scratch. It would be easier for everyone."

Get results like these when you migrate from an IBM mainframe to Unix.

"We made the scheduled migration date. Could not have done it without Workstation products. Needed capabilities that vi and other products didn't offer - only uni-XEDIT." —Bellcore

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Xiconics, Inc. has announced XipView a Windows-based image accelerator.

According to the Peabody, Mass., company, XipView uses a proprietary very large-scale integration chip for decompression rates of up to 40 document pages per minute.

Available to grayscale or color, the product is optimized for the display and manipulation of images in the Windows environment, providing decompression, accelerated Windows display, high resolution and high refresh rates.

The XipView color controller costs \$1,560. The XipView grayscale controller, which comes with a monitor system, costs \$2,495.

► Xiconics
(508) 531-6666

Product short

Qualitas, Inc. has announced a bundle of its 386Max system memory management software with Borland International, Inc.'s Sidekick personal organizer. Cost: \$89. Qualitas, Bethesda, Md. (301) 907-6700.

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Arcada, Cheyenne battle for NT backup market

By Mary Brandel

There is a war brewing in the NT backup market.

For the past eight months, Arcada Software, Inc. has been the reigning (and only) supplier of backup software for Microsoft Corp.'s Windows NT operating system. Its third iteration of Backup Exec for NT, slated for an early 1995 release, was demonstrated last week at Comdex/Fall '94 in Las Vegas.

A few booths down from Arcada was Cheyenne Software, Inc., the king of backup in the Novell, Inc. NetWare world. Cheyenne also wants a piece of the NT pie. It just recently announced Arcserve for NT, which is slated to ship next month. Not surprisingly, the barbs are flying.

Age vs. fame

Arcada's biggest claim is experience: Its product is in its third release, while Cheyenne's is Version 1.0.

Cheyenne has huge name recognition on its side. "I'd heard some cautionary words regarding [early versions of] Arcserve," said Robert Truxall, vice president of product development at the Strategic Solutions Group in Inglewood, Calif. Truxall said he is leaning toward Cheyenne because "we've been real happy with Arcserve on Novell."

However, "Cheyenne will have to do more than just a comparable offering if they want a significant portion of that marketplace," said Rob Enderle, an analyst at Dataquest, Inc. Arcada's "income base is growing on NT by leaps and bounds."

Missing features

So far, Cheyenne's NT product is not on a par with its NetWare product. The vendor plans to release a series of NT products that by mid-1995 will incorporate all

the features of the NetWare version, said Jon Greene, Windows NT product manager at Cheyenne.

One user lamented the missing features. "There's no AutoPilot," said John Matthews, president of CompLiquise, Inc., a consultancy in Sherman Oaks, Calif. "That's depressing." AutoPilot, he explained, enables users to pre-schedule backup jobs.

Neither is there support for heterogeneous clients. On its side, Arcada promises Unix and Macintosh agents in its January release.

Managing backup

A third disappointment for users is that "you can't control backup from any workstation on the network," Matthews said. "You have to be at the server."

The ability to manage backup from a remote workstation is an important change to Cheyenne's upcoming product, said David Greenberg, director of new systems development at Orlando Health Care in Florida. In addition, it will run as a server-based process. With the current version, "if a server shuts down, somebody has to be there to log back in," Greenberg said. With the new version, "you just click a box for auto startup."

Cheyenne's planned release will also be a server-based process.

There are other key differences between the products, which include the following:

• Arcada's Version 6.0 release is expected to run on Intel Corp. hardware plus a variety of RISL platforms. Cheyenne said it has multiple hardware versions running in the laboratory.

• Cheyenne is using an interface that it claims is similar to Microsoft's planned next generation of Windows, Windows 95. "Instead of a top-and-bottom view of

what you're backing up, it's a side-by-side, tabular format," Matthews said.

• Arcada supports the Microsoft Tape Format, enabling users to interchange data with tapes backed up by the basic backup application included in NT. Cheyenne supports its own tape format because it was important, Greene said, to ensure interoperability with its other backup software.

• Cheyenne's product costs \$895. Autochanger support is available as an optional module for \$695. Arcada has not yet set pricing. Its original Backup Exec for NT costs \$795.



Users said they were pleased with the tab type of screen format Cheyenne uses in Arcserve for NT.

"We're reevaluating our pricing strategy," said Kevin Aszow, president of Arcada. "If our competitors charge more, we may be forced to increase the price."

Storage efforts

Storage announcements at Comdex included the following:

- **Walt Storage?** Here's a taste of the stuff from Procom Technology, Inc. in Irvine, Calif. The firm unveiled RaidRack, a \$28,000 to \$750,000 disk array subsystem targeted at the high-performance workstation market.
- On the optical side, a number of vendors announced quad-speed CD-ROM drives. For example, Toray Optical Storage Solutions released the Phaserwriter Dual 5¼-in. drive, which is designed for multimedia PC users who want to use CD-ROM and reversible optical discs in the same drive.
- Two companies are now selling stor-

age systems that mix and match media. Mega Drive Systems, Inc. in Beverly Hills, Calif., released Mega-Drive Enterprise, which costs \$1,300 and accommodates optical, CD-ROM and hard drives, plus 5¼ and 4¼ tape. MediaLogic ADL in Boulder, Colo., is offering its Scalable Library Architecture product line, which incorporates 4mm, 6mm and Digital Linear Tape Libraries.- **Hitachi America Ltd.**, jumped on the magneto-resistive head bandwagon, offering 1-in.-high, 3½-in. drives with 10 to 4.80 bytes of capacity. Shipment is slated for the second quarter of next year.

Stan Schatt

Lessons taught in first grade

My wife's little first-grade students are making progress. Already, most of them have learned how to share toys, play with their classmates without fighting and work together in a spirit of cooperation.

I suspect Bill Gates must have skipped this all-important grade. The lessons he would have learned certainly would help Microsoft today in the networking market.

More importantly, they would make life easier for network managers who must live in a desktop environment controlled by the Redmond, Wash., giant.

One of the first lessons my wife teaches is how to work cooperatively. Remember the problems you had when you first tried to make Windows work in a Novell NetWare environment? Microsoft's answer was that this product would work much better in a LAN Manager environment. The pitch responded by continuing to choose NetWare over LAN Manager, so Microsoft belatedly made some effort to eliminate conflicts. Then Windows for Workgroups came out, and Microsoft mounted a campaign to bypass the NetWare manager by going directly to corporate end users. The pitch was, install Windows for Workgroups on your PC, gain your own nifty scheduler program and

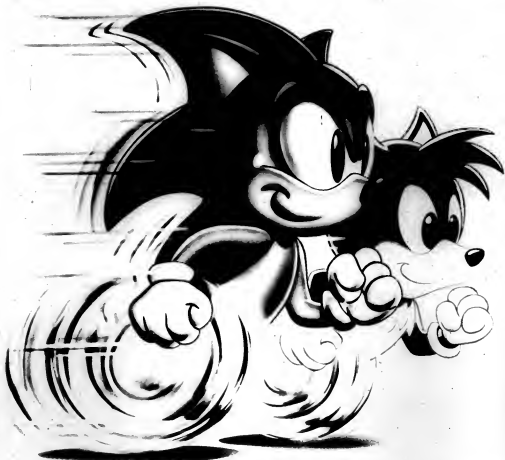
don't worry about that nasty network manager who probably is a NetWare lover. Unfortunately, that mean old

LAN manager often vetoed Windows for Workgroups on the grounds that it introduced new interoperability problems onto the LAN.

Bill Gates and Microsoft have long been confused about the networking market primarily because it requires a cooperative rather than combative stance. While Novell blossomed by consciously trying to grow the entire market via "cooperation," MS-Net and LAN Manager failed as Bill Gates pursued a burn-and-pillage marketing plan against Novell.

Have you ever called Microsoft about a network problem and received the admonishment that the problem is obviously a conflict with a non-Microsoft application? The implication is that other software companies must worry about compatibility and that Microsoft refuses to take responsibility to provide one-call support for the network as a whole unit.

Schatt, page 51



Why Sonic The Hedgehog™ Moves So Fast.

"Thanks to CA-Warehouse Boss, our warehouse was able to ship more games in September, '93 than we did in the past two years," says Bill Downs, Director of MIS for SEGA of America, Inc., the makers of the world's fastest moving video games like Sonic The Hedgehog.

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DCA, Simware unveil remote access software

By Suresh Mohan

As well-traveled users increasingly rely on corporate data and telecommuting becomes more a reality than a fact, companies are vying with one another to provide the features users need to make remote access easy.

Digital Communications Associates, Inc. (DCA) in Alpharetta, Ga., and Simware, Inc. in Ottawa announced new versions of their connectivity products. DCA introduced Version 3.0 of its Remote LAN Node (RLN) client and server LAN access software, and Simware rolled out AZB Version 3.0, which provides LAN and host connectivity.

Although DCA does not tout RLN as a host connectivity product, the software does carry remote users a step closer to legacy data. "Any product that gets you to the LAN will get you to the host," said Val Striker, program director of global networking strategies at Mesa Group, Inc. in Reston, Va. Other features will determine whether the product stands out from a slew of competitors on the market, he said.

Unlike all the rest

Technically, DCA's offerings do not differentiate it from its competitors as much as do the company's size and global presence, according to Kitty Weldon, data communications analyst at The Yankee Group in Boston. But the company is interesting because it offers a software solution, which is always more flexible than a hardware upgrade, Weldon said.

One of RLN's interesting features is

OS/2 support. Not intended for the pure OS/2 environment, the product makes the network administrator's life easier by providing the same interface across DOS, Windows and OS/2, Striker said.

Simware on the other hand prides itself on providing end-to-end automation in a Novell, Inc. NetWare environment, according to Chris Pedorko, vice president of marketing at Simware. Remote users need only click on an icon and the application automatically dials into the LAN and connects them to the whole network.

More accessible

The University of Ottawa is using AZB to do Digital Equipment Corp. VT100 emulation, which allows campus users to access Unix machines, said Jacinthe Mutchmore, assistant director of computing and communications services. A big advantage to using AZB is that all users have a common interface, regardless of location.

Previously, depending on the system they were accessing and their location, users had three to four interfaces, which made administration an extremely difficult task.

RLN 3.0 from DCA is available immediately. AZB 3.0 will be available next month.

The client end of the AZB 3.0 enterprise solution costs \$895 per user; the server ranges from \$650 to \$7,250. The client for remote LAN access only costs \$59.

RLN 3.0 is available for Ethernet and Token Ring configurations at prices ranging from \$895 to \$14,295, depending on the configuration.

Schatt

CONTINUED FROM PAGE 40

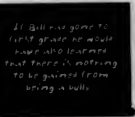
you're in a pure vanilla Microsoft world. If Bill had gone to first grade, he would have also learned that there is nothing to be gained from being a bully. Software companies continue to fall behind Microsoft applications in implementing new Windows versions; this trend will continue despite the recent settlement with the Justice Department. What happens to innovation when small companies spend most of their time worrying that Microsoft will let them develop a new networking niche and then move in with its channel client to drive out the small guy? Small companies also worry about being sued by Microsoft and being tied up in court for years while their revenue dries up.

Asking for help

When first-graders have problems, they turn directly to their teacher for immediate assistance. Imagine what would happen if she asked them to call a toll-free number to help figure out their math assignment? What (Chairman) Bill and Microsoft have understood about network managers is their desire for good hand-holding support and not simply a telephone/fax support line. A telephone support line might support a stand-alone product such as Excel, but if it doesn't help the LAN manager who is panicked because the network is down and wants to talk to a real, live person—preferably someone in the same city.

Some first-graders must learn they can't dictate all the rules of a game simply because they brought their ball to school. If Windows 95 only permits access to Microsoft's Marvel on-line service and makes it difficult to dial into Compu-

Serve or America Online, I suspect customers will react much the way children do when a child threatens to take his ball home if he can't be the permanent baller. Personal responsibility is also an important first-grade lesson. Children who volunteer for classroom jobs must perform them or the entire class suffers. If kids take books home to practice reading, they must return them the next morning so that there are enough books for everyone in the class-storied school. In the past, Novell has taken responsibility for growing the entire networking industry in an unselfish way. Gates now must share that responsibility. This means working with industry associations to support all major standards. Some customers will want a Windows



networking environment and support a non-Microsoft E-mail standard, and others will want Novell's embedded NetWare rather than Windows At Work.

Bill Gates has done so incredible job building the world's most successful desktop software company. His lack of success in the network arena suggests he might need to learn some of the lessons taught as early as first grade. Unfortunately, I think he would find the luxury and chairs very uncomfortable.

Schatt is a LAN service director at Computer Intelligence Inc. in La Jolla, Calif.

Evergreen announces SMP upgrade for 486 machines

By Erin Callaway

Users thinking about multiprocessing could be in for a surprise.

At Comdex/Pal '94 last week, Evergreen Technologies, Inc. in Coralville, Iowa, unveiled what it claims is the world's first symmetrical multiprocessing upgrade for 486-based computers. By using the upgrade, users could get an extra mile out of their 486 servers and also benefit from multiprocessing power.

Supporting interoperability

Called Rev To SMP, the product is a dual-processor module designed to transform a uniprocessor 486-based computer into a symmetrical multiprocessing (SMP) system. By using the product, users can enjoy any combination of 486SX, DX, DX2, DX4 or Intel Corp. OverDrive processors, the company said.

Rev To SMP is compatible with CPUs from Intel, Advanced Micro Devices, Inc. and Cyrix Corp. and will eventually run

with processors from IBM, Texas Instruments, Inc. and SGS-Thomson. Evergreen will demonstrate the module running with a beta version of IBM's OS/2. Rev To SMP is targeted to run with Microsoft Corp.'s Windows NT by the end of this year, Evergreen said.

James Greene, senior research analyst at BIS Strategic Decisions in Norwell, Mass., questioned why anyone would want to put SMP on the desktop.

"OS/2 or NT are such power hogs that people planning to use them have probably already got high-end workstations," Greene said. "As a server, this might make sense, but as a desktop stand-alone, I just don't see why you'd want to bother."

Evergreen is touting the upgrade as being faster than the Intel Pentium but has not yet benchmarked the module's performance. The multiprocessing power

will at least equal the power of a 486 server, a company representative said.

That possibility comes as good news to Bill Thomson, director of information technology at PrimeSource Corp., a shipping container leasing company in Burlington, Calif.

"This could be ideal for prolonging the life of my Rev 486 250 servers," Thomson said. "Even if it just adds one equal to what I've got now, it could be very useful given the utility."

More for less

George Loyer, vice president and general manager at Pacifica Consulting, Inc. in Halesburg, Calif., agreed that the product has impressive potential as a server upgrade.

"If this product does what it claims to, it could mean getting 24 months out of a server instead of just 12," Loyer said. In addition to prolonging users' initial investments, Evergreen said the up-

grade will cost only around \$2,000, even if users have to purchase two new high-end 486 processors.

Performance problem

Despite the upgrade's attractive price tag, Greene expressed serious doubts about Rev To SMP's supposed performance capability.

"This sounds like it could be an electrical nightmare," Greene said. "Unless you plan to upgrade the subsystem, two 486 chips would put a tremendous strain on the motherboard."

Greene also speculated it could increase problems handling I/O bottlenecks.

"Bottlenecks are always the biggest problem with servers," Greene said. "I just don't see how a 486 slipped on its side with a couple of extra processors will be any better."

Evergreen said it is arranging contracts to begin beta-testing Rev To SMP by year's end.



Insight: An Example Maximizing Return from Sponsored by Dell Co

Equipping teams of mobile workers with notebook computers giving them access to the same automated tools and information their desk-bound peers enjoy makes intuitive sense. But does it make good business sense? The answer is a definite yes.

This is a key finding of a recent study of more than 400 large and medium-sized U.S. organizations involved in field force automation, conducted by International Data Corporation, the world's leading information technology market research firm.

The best protection for an initial investment in field force automation is continued investment

The business case for automating the field force is reported in this Insight. An in-depth discussion is available in a special IDC White Paper, *Field Force Automation: The Keys to Success* (see box, far right). The White Paper also details key factors of a successful field force automation program discussed in an earlier Insight.

According to the companies and government agencies polled, the business case for field force automation generally requires achieving a measurable return on investment (ROI). In order of importance, ROI was measured in terms of:

- | Key Benchmarks |
|--|
| • Average field force automation projects take 21 months from design through implementation and rollout. |
| • 45% of the costs are incurred in the first year of implementation for companies with a planning horizon beyond one year. |
| • 60% of companies felt their implementations met or exceeded expectations. |
| • Average first-year investment level is \$6,400 per user. |
| • Average investment payback period is 2.6 years. |

- Internal productivity, such as order processing time, transaction rates, and revenue per employee
- Customer service, from satisfaction ratings to call handling and order turnaround statistics
- Field force approval, as evidenced in formal polls, actual usage of the application, and continued funding by field management
- Enhanced competitiveness, based on both informal feedback and on competitive operational measures, such as mean-time-to-repair, transactions per employee, or sales costs
- Financial returns, such as increased revenues or profits and other formal ROI calculations

Against these yardsticks, American companies generally report field force automation success ratios as shown in Figure 1.

Over 25% of respondents felt that field force automation had given them a sustainable competitive advantage. Given that over 70% of large and medium-sized organizations in the United States are involved in field force automation—generally in their second

or third generation—successful field force automation is likely to become a key factor in business success.

How Big an Investment?

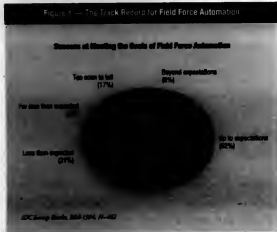
The typical organization had dozens of workgroups. The average line manager's workgroup size was 100, and notebook computers were routinely ordered by the hundreds.

Automating a field force then is not just supplying workers with notebook computers and copies of Microsoft Office. It is a full, enterprise-wide application taking several years to implement (see Figure 2) and impacting thousands of employees.

The investment required is not trivial. Companies in the IDC study reported an average first-year implementation cost per user of \$6,400, broken down as follows:

- Hardware, 50%
- Packaged software, 20%
- Internal software development, 15%
- User training, 9%
- Consulting, 4%
- Other staff, 4%

Cost-per-seat figures may, however, understate infrastructure costs such as

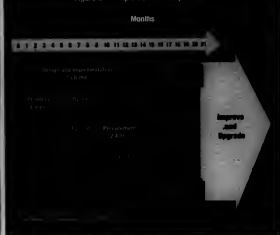


Executive Briefing

Field Force Automation

Computer Corporation

Figure 2 — Implementation Cycle Time



training, applications development, system and network management, phone bills, and overhead that are generally built into operating budgets. Unexpected problems during implementation in training, end-user support, and communications also caused unbudgeted expenses.

While the costs of field force automation may have been understated, the financial benefits probably were as well. The dollar value of an additional point of market share or a 10% improvement in customer satisfaction rating can be in the millions for a large or medium-sized company. Soft dollar returns actually may be bigger than hard dollar returns.

Protecting the Investment

Establishing an application is one thing—keeping it running and competitive is another. According to those companies claiming field force automation had given them a competitive advantage, the best protection for an initial investment was continued investment. Technology upgrade—improved hardware and software—was cited as most critical for ongoing success.

The need to keep upgrading will not diminish. Today's notebook computers are lighter and more powerful, batteries last longer, and desktop expansions and wireless networks make connectivity easier. Dollars spent on upgrading and improving field force automation hardware and software will go even further than

those spent on initial implementation.

A major source of investment protection comes in the wise choice of vendor and technology. The average application takes one to two years from design to full rollout, and the average investment payback period is close to three years. The relationship between customer and supplier is long term in nature.

A supplier must have top-notch service and support, wide geographical reach, a continually refreshed product line, and a company reputation and viability beyond concern. The supplier must also understand the need for programmed upgrades and asset management, and be willing to disclose its own product plans and business directions.

The valuable vendor in today's mobile marketplace will provide its client a technology road map that offers guidance in deploying management resources, scheduling technology upgrades, and disposing of outdated equipment.

Only after a vendor meets these criteria does product price become an issue. The annualized cost of that notebook computer in a salesperson's briefcase is less than 1% of the investment in salary and overhead to keep them in the field. Quality equipment is a minimal expense in the total success formula.

The Call to Action

The research clearly shows that the business case for field force automation is a strong one. Payoffs are real and measurable. Achieving them is a matter of careful planning and execu-

Variations in the Field

Experiences with field force automation in the IDC study varied depending on industry and the area automated.

- Sales and marketing are less automated than customer service, accounting, or transaction processing functions.
- Manufacturing companies reported the highest percentage for sales automation—50% versus 35% for the total sample.
- Discrete manufacturing companies reported first-year per-user investments of \$7,800, versus an average \$6,400.
- Accounting and auditing applications have the shortest payback period—2.3 versus 2.6 years.
- Banks report the shortest time from design to implementation—10 months instead of 14.

tion: maintaining them requires continued commitment and ongoing technology investment—an investment with substantial return.

—John Gantz
Senior Vice President
International Data Corporation

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Vendor scalability goals outstrip need

50,000-node capacity called 'kind of a great theoretical maximum'

By Steve Moore

■ Vendors are working feverishly to allow their network management systems to scale up to handle 50,000 nodes or more. But, who needs it? Few users operate on such a grand scale, and several customers said this capability is very far down on their wish lists.

"We're trying to walk before we run, and we don't have distributed applications running on everyone's desk yet," said Ron Well, manager of performance and capacity planning at Charles Schwab & Co. in San Francisco.

"Managing 5,000 nodes is the widest projection I could imagine," he said.

"We're currently running about 5,000 [IP] nodes," said Paul Edmunds, senior information systems analyst at Duke Power Co. in Charlotte, N.C. He said he does not expect Duke Power's network to expand to more than about 12,000 nodes during the next few years.

Still, the vendors are persevering, and analysts said massive scalability is something some users consider when buying network management systems. Tivoli Systems, Inc. claims its Tivoli Management System can

support 50,000 nodes, and Hewlett-Packard Co. and Net-Lab, Inc. recently said their OpenView and NerveCenter systems can now work together to support 80,000 nodes.

But in the smaller networks operated by the majority of users, scalability represents more of a security blanket than an immediate procurement item. Although very few users today manage more than 10,000 nodes from one point, "they want to be reassured that they can do it if they have to," said Jill Huntington-Lee, principal consultant at Brandywine Network Associates in Cinnaminson, N.J.

Infinitesimal minority

According to Cheryl Currid, president of Houston consultancy Currid & Co., "Less than a tenth of 1% of networks in the world" need to scale to 50,000 nodes. She called that number "kind of a great theoretical maximum."

Other customers confirmed that notion. Ralph Tookley, senior communications system programmer at American Cyanamid Co. in Clifton, N.J., said if the networks of American Cyanamid and American Home Products are fully combined after the companies complete their impending merger, the number of managed

nodes will likely be below 40,000.

"Sufficiently distinct business functions may have completely distinct networks, and that may be a good thing," Tookley said. Cyanamid previously tried several of its own networks together but then found that users engaged in little real communication, he added.

"The real missing piece in network management has to do with people, not technology," Currid said. "The crux is on managers to invest in training so that more nodes can be managed per brain."

But vendors insist that if users want to manage bigger networks with fewer brains, they must invest in "intelligent" management systems that operate according to user-defined policies under which individual domains beat themselves and send only minimal traffic to a central console.

"The idea of distributing specialized intelligent agents is more cost-effective in the long run than having some big expert system at the top," Huntington-Lee said.

However, Tookley said, vendors' policy-based management schemes break down in extremely large networks because "there are bound to be exceptions to any rule when you scale up that large," and the number of exceptions can quickly become unmanageable.



California county network employs the MIDAS touch

By Stephen P. Klett Jr.
NOVATO, CALIF.

Marin County in California has set up an Internet system that permits all public and private organizations to share information.

The new any-to-any network, called the Marin Information and Data Access System (MIDAS), is built around a countywide fiber-optic network consisting of a fiber

Distributed Data Interface backbone connected to 3Com Corp. routers and SynOptics Communications, Inc. hubs. Wide-area access is provided by frame-relay services from Pacific Bell over mostly T1 and 56K bit/sec leased lines.

Communication between Marin County and the outside world is conducted via the Internet. In fact, according to David Hill, project

manager at the County of Marin Data Processing Department, MIDAS was built on an Internet management model.

"Each organization is a node on the network that can communicate with any other node," Hill said. "We now have fields of interest brokering with each other that didn't before, and our goal is not to control the network but to let it grow and proliferate as needed."

Harmonic convergence

Participants say that in addition to improving communication, MIDAS has fostered a new level of cooperation and collaboration among disparate organizations not used to working with one another.

"Our way of doing business is changing. Schools and libraries are realizing it is no longer necessary to compete with each other and that collaboration can be fundamentally good for everyone involved," Hill

said. Another benefit, he added, is that Marin hopes to make itself more attractive as a location for new businesses.

In addition to a countywide electronic-mail system, MIDAS comprises the following:

- **Marin Libraries Consortium**, which provides all users on the MIDAS network with on-line database access to three city libraries as well as the county library.

- **Marin Cities and County Public Access System**, which provides dial-up and Internet users with access to schedules, agendas and minutes of city council and board of directors meetings. Sixty percent of Marin County residents have PCs at home.

- **Home Care Consortium**, which provides an automated registry of in-home workers to assist with personal care and household chores, coordinated by two government agencies and multiple private nonprofit agencies.

- **Marin Property System Title Company Access System**, which will create a special access menu for title companies to display on, demand the property information needed for title searches.

MIDAS will also improve coordination, MIDAS, page 62

ON SITE

Marin County IS Department Novato, Calif.

Challenge: To provide universal, on-demand access to a countywide network for all public, private and nonprofit sectors.

Technology: Fiber-based Internetnet, with a fiber-optic backbone. Wide-area access provided via frame-relay services. Individual and points connected via low-cost, remote-office routers.

Result: How communication and collaboration opportunities provide new avenues for economic growth and education.



Key contributors to MIDAS are, from left, Bill Blackmer, Michael Gross and David Hill

KPMG turns to FirstClass groupware

By Lynda Radosovich

Like many of its Big Six consulting and accounting firm brethren, KPMG Post Marwick is rolling out a corporatewide groupware system meant to help its professionals more efficiently share their expertise.

However, unlike its competitors, KPMG did not build its system on Notes. Rather, it is using FirstClass, a client/server groupware system from SoftArc, Inc., to create a unified front end for the various information sources.

KPMG is starting to roll out its massive in-house groupware system, dubbed Knowledge Manager, to 17,000 employees this month. The system allows KPMG personnel using Macintoshes or PCs to click on icons and access remote databases that contain, in a sense, examples of successful proposals for floor space utilization.

Michael Donahue, a management consulting partner, said a pilot version of Knowledge Manager helped KPMG win a bid at a New York, east insurance company. At 5 p.m. on a Friday in August, the insurer asked KPMG for a proposal for a major technology overhaul.

Four partners working in different cities collaborated

over the weekend using Knowledge Manager to gather background information, access graphics libraries and communicate. By noon Monday they delivered a thick proposal to the insurer, complete with graphics and diagrams. In this case, KPMG won the account, beating Electronic Data Systems Corp., IBM and Coopers & Lybrand in the process, Donahue said.

Without Knowledge Manager, putting together such a proposal would have taken three to five business days — even pulling out all stops — be added.

"We want to deliver to every individual in the firm the combined intellectual global assets of the firm," said Allan Frank, managing partner at the enabling technologies division.

KPMG would not provide specific details for the project but said FirstClass licenses cost roughly \$10 per user.

Notes alternative

Although KPMG recommends Notes to many clients, it was not suitable for KPMG's application. In part because of its proprietary database structure, according to Tony Otavio, KPMG's chief information officer.

For instance, much of the company's information is contained in Microsoft Word, Word, Excel and PowerPoint



KPMG's Allan Frank: Delivering intellectual assets to every individual in the firm

files on Novell, Inc. NetWare servers. To use Notes, the firm would have had to move the information in all those documents into Notes' proprietary databases using Lotus Development Corp.'s unique programming language, Otavio said.

FirstClass enabled KPMG to build a front end that lets users see directories of various documents. Users can then upload selections by clicking on icons. Because the information remains in its native application format on a separate file server, KPMG is free to migrate from FirstClass to other groupware engines such as the forthcoming Microsoft Exchange server, Otavio said.

Tom Austin, an analyst at Gartner Group, Inc., agreed that once a company builds code in Notes, that code is not por-

table to other platforms. "KPMG is betting that in two years, Oracle and Exchange will provide a better solution than Notes," he said.

KPMG began testing Knowledge Manager last summer with 1,400 users in the advanced technologies division in Radnor, Pa. Before the system was installed, professionals working on a proposal had to call around to find experts in the areas in which they needed information.

In preparing for Knowledge Manager, KPMG found that its largest technology challenge was building the underlying network support. The company runs both AppleTalk and IPX on all LANs and TCP/IP on wide-area connections. Diagnosing problems over the mixed-protocol network is problematic, Otavio said.

TGV's onetime passwords evade intruders

By Gary H. Antkes

In a move to keep companies a step ahead of network hackers, TGV, Inc., in Santa Cruz, Calif., recently introduced Secure/IP, a token-based product for user authentication.

The software allows users to replace traditional passwords with onetime passwords that are useless if captured by would-be network intruders. It is used with portable cards, or "tokens," that generate the passwords. Users enter the password and a personal identification number to access a computer running Secure/IP on a TCP/IP network.

The U.S. Department of Energy's Oak Ridge National Laboratory in Tennessee is beginning to use the Secure/IP software — with tokens from Digital Equipment Corp. — to secure hosts holding sensitive data. Some 200 users with privileged accounts on Digital Equipment Corp. VAXs and VAXstations will use the onetime-password technology, said Lawrence MacIntyre, a networking specialist.

The VAXs represent a small portion of the 10,000 computers attached to the Oak Ridge network, and they are insulated from the internet by firewalls. But the extra security is intended to safeguard the machines from un-

authorized access by internal users, MacIntyre said.

He said he also uses the technology to protect his own VAXstation. That enabled him to safely log in to his computer from the Interop trade show in Atlanta recently, where an elaborate vendor network was set up and connected to the Internet. "It would have been suicide to use real passwords over that network," he said. "If there is any place your password is going to get sniffling, that's it."

Top security

"Token-based security is the most robust user authentication for networks available," said James Harrison, vice president of global networking strategies at Meis Group, Inc. in Westport, Conn. "It is fast becoming a critical component of the enterprise security architecture."

Secure/IP will be initially available for users of TGV's MultiNet version of TCP/IP for Digital's OpenVMS VAX and Alpha AXP computers. The client software will be included in MultiNet for Windows during the first quarter of next year. For VAX computers, the software costs \$1,000 to \$2,000, depending on the number of users.

Although MultiNet includes the Kerberos user authentication technology developed by MIT in Cambridge, Mass., Secure/IP is better suited for groups that are highly distributed geographically, according to TGV.

"Kerberos is best for a small number of centrally administered workstations," said Craig Conway, TGV's president and chief executive officer. In larger companies, encryption key distribution "can be a big problem," he added.

Anil Khosla, a research analyst at City University of New York, said the university is experimenting with token-based authentication, including Secure/IP, for its network administrators. "We have an academic environment and all the problems associated with students trying to do funny things," he said.

Khosla said he worries about someone setting up a network "sniffer" to intercept unencrypted passwords coming into the 1,000-plus-node campus network. "If I was at a trade show or at some other university, I'd think twice about logging on via remote Telnet," he said. "So the alternative is to have a handheld token" to ensure an intercepted password would not be reused.

The Secure/IP software works with major tokens such as Security Dynamics, Inc.'s SecurID, Digital Pathways' SecurID and Bellcore's S-Key security tokens.

Fast pace

TGV was ranked 40th on *Inc.* magazine's recent list of the fastest growing private companies. TGV's sales have increased 4,023% from \$357,000 in 1989 to 1993, when the company posted sales of \$54.7 million.



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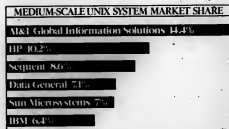
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David Slater

Password panic

Are we on the threshold of a unforeseen crisis in the data processing industry? Is the message "MAX PASSWORDS EXCEEDED" flashing behind your retinas as you struggle to recall a password allowed for too long? Is the future of civilization as we know it dependent on the frailties of human frailties—short-term memory? Take a minute and think about how many IDs and passwords you have to remember, not just in your job but in your life altogether.

There are more than you might expect, and if this password overload cannot be reduced to a manageable level, the economy is doomed.

Here are a few examples of the passwords I have to deal with on my current project:

- Corporate LAN identification and password.
- Passwords on about five different Unix machines.
- Corporate voice-mail password.
- Add to those the growing number of passwords to remember for both work and home, which include the following:
 - ATM personal identification number.
 - Home and office voice-mail passwords.
 - Internet ID.
 - Miscellaneous on-line bulletin board services—CompuServe, local PC users' group, etc.
 - Database (Oracle, etc.).
 - Most business applications.
 - Long-distance service.

And there are undoubtedly others I can't remember right now.

Now what?

Just to make it more interesting, all these passwords have different requirements to remember if you must change them. They may include some or all of the following: that they be all letters or all numbers; that you do not use the ones you've used before back a number of times; that they contain a specified number of numerals or characters. Some never require change at 30, 60 or 90 days or some random interval.

Some people attempt to reduce memory overload by using the same password for all applications. Besides being a security nightmare, this solution has the unfortunate and time-consuming side effect of forcing you to change all your passwords every time you change one.

Infrequency of use is a serious

factor in password forgetfulness. If I haven't used a password in more than 30 days, the likelihood of my remembering it on my own is no better than a toss-up, or 50-50.

Human short-term memory degrades rapidly until the short-term expires, some what like the date on a milk carton, at which time the information is no longer available or recoverable.

How about lost productivity in time spent resetting forgotten or otherwise lost passwords? At some point, the rising curve of lost time (not to mention corporate resources dedicated to keeping track of security) will intersect with the falling curve of productivity. As the number of passwords rises, time spent trying to remember or reset passwords will exceed actual productive time and the economy will grind to a halt.

- What are the solutions?
 - We could eliminate all passwords. This still leaves user IDs to remember, but it would reduce the load greatly. But this idea would make those in charge of security very nervous and unemploy a significant number of people.
 - Create for each person a unique global password that would be easy to remember and would work for all systems. This is probably the most sensible approach, which makes it the least likely candidate. And it still requires the individual to remember a password.
 - Create one universal password for all. The appearance and aura of security would be maintained, and security people would remain employed. The likelihood of forgetting passwords would plummet and approach, but not quite reach, zero—if you forgot it you could just ask the person next to you.
 - Bypass human short-term memory by implanting a uniquely identified biologic chip which passwords are encoded and that could communicate with any system. This might work similarly to the military's IFF (Identification Friend or Foe) system, with an exchange of signals. Still well in the future, but a likely scenario.

Are we approaching password insanity? That seems to be the trend. Yesterday I received notice that one of my credit cards now has a personal identification number for me to add to any list of passwords. Oh well.

Slater is a design architect at Productive Data Systems in Denver. He can be reached via CompuServe at 720 60, 421.

Briefs

1490 group assembles

A group of interworking product vendors has formed the 1490 Market Development Group. Request for Comments 1490 discusses the running of multiple protocols over frame relay, and the aim of the group is to build awareness in the marketplace for an alternative to SNA and LAN interworking. This will be done through a number of market programs such as seminars, white papers and speaking engagements. The group will not attempt to offer advice to specific users on products and strategy.

25M bit/sec. picks up steam

25M bit/sec. Asynchronous Transfer Mode (ATM) technology received yet another boost with the recent announcement of the formation of Whitetree Network Technologies, Inc., which will sell workgroup products based on 25M bit/sec. ATM. In addition, Madge Networks, Inc. has partnered with Whitetree, a Palo Alto, Calif., start-up, to develop 25M bit/sec. ATM products. The two companies will first develop a 25M bit/sec. LAN, in licensing solely on 25M bit/sec. ATM. Whitetree also spearheaded the recent formation of the Desktop25 ATM Alliance with IBM.

Oracle sniffs out performance

Network General Corp. and Oracle Corp.

have announced a technology agreement under which Network General's sniffer products will be used to help optimize the performance of Oracle databases across networks. Using protocol decoders and analysis, the companies aim to enable users to determine whether database performance problems are attributable to the client application, the network, the server or the database. The new capabilities are slated to become available next year.

At-home shopping planned

Digital Equipment Corp. will join with MicroMail, Inc. to build at-home interactive shopping environments for retailers. MicroMail will provide an electronic-mail framework, and Digital will provide the video server technology and media studio resources. Land's End, Inc. was the first company to sign on.

IBM unveils second ATM phase

IBM has rolled out its second phase of Asynchronous Transfer Mode (ATM) products. The company has unveiled an ATM backbone and ATM modules for the IBM (4050) interface bus ATM LAN bridge that lets users add ATM to their current Ethernet or Token Ring networks, and ATM Campus Manager for AIX, which lets users manage ATM networks in a campus environment. In June, IBM rolled out wide-area ATM switches, adapters and LAN emulation software.

MIDAS

CONTINUED FROM PAGE 57

nation among county criminal justice systems. It will, for example, electronically transfer criminal justice photographs from the cities of Novato and San Rafael to the Marin County Sheriff's and District Attorney's offices.

While MIDAS brings together the public and private sectors, it also ensures that nonprofit organizations are not forgotten as the county merges onto the emerging information superhighway.

"People have been afraid that nonprofits will be shut out of the information superhighway. We have guaranteed there will be more than one nonprofit in line," said Michael Gross, direc-

tor of community programs at the Marin Community Foundation in Larkspur, Calif.

Hill, Ben Dwyden, director of information services and technology, and Bill Blackmer, senior information support analyst, are the principal information systems architects overseeing MIDAS.

Far apart

Before the hardware and cabling infrastructure for MIDAS was completed last month, the myriad independent public and private networks in the county might as well have been on opposite sides of the world, not down the street or across a city when it came to sharing information.

"Before MIDAS, we didn't have a sophisticated network by any stretch of the imagination," Dwyden said.

Back to school

Marin County's schools perhaps stand to reap some of the biggest benefits from MIDAS, and many are buying computer equipment this year instead of football equipment, according to David Hill, project manager at the county's data processing department.

For example, the Novato school district alone has earmarked \$500,000 for technology investments to install LANs and computer equipment to connect to MIDAS.

Michael Gross, director of community programs at the Marin Community Founda-

tion in Larkspur, Calif., said the Marin library network will likely be extended to include other Bay Area libraries and eventually even the Library of Congress. In addition, students will be able to browse the vast resources on the Internet as well.

The county is also banking on heavy use of multimedia applications for education, which MIDAS will be able to support. For instance, Hill said he envisions specialized courses on the Civil War with point-and-click interfaces comparing video, voice and textual data. — Stephen P. Klett Jr.

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Large Systems

GROUPS FIGHT END OF IBM
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Parallel processing

PNC Bank profits from parallel system

By Thomas Hoffman

With an expanding loan portfolio that earlier this year was approaching 750,000 accounts, PNC Bank had to push its IBM mainframes hard in the wee hours to update customer files for its tellers and customer services representatives by the next business day.

Starting at 15% to 20% annual growth of its loan portfolio, the Pittsburgh-based bank had to do something to increase the capacity of its host systems. To help streamline its processing and provide ample room for future growth in its loan portfolio, the bank, which reported \$64 billion in assets last year, recently implemented a parallel processing system that divides the workload among its IBM ES/9000 mainframe processors.

Help wanted

In the past 10 years—through a combination of corporate acquisitions and in-house development—PNC amassed 27 different loan accounting systems. In the past three years, PNC consolidated these into a single corporate system, but the IBM 3070 and 3080 mainframes used to batch-process customer data each night were struggling to keep up.

"We were really hitting the threshold of how much processing we could do with one system," said Ed Harnish, group vice president and MIS manager of PNC's consumer credit systems, of the batch processing that occurred between 9 p.m. and 5 a.m.

Early this year, PNC's technical staff and consulting partner American Management Systems, Inc. (AMS) divided the bank's loan files into four parallel segments. To support the initiative, PNC logically partitioned its AMS Advanced

Consumer Loan System databases to run concurrently on its three IBM ES/9000 mainframes over IBM's MVS/ESA operating system.

PNC assigned one of its information systems staffers and an AMS consultant to design the parallel processing system over a four-month period. Four additional staffers implemented and tested

the system during the next four-month phase. Harnish estimated the eight-month project cost \$140,000, including consulting services and programmer time.

Making gains

After completing the design of the parallel processing environment, PNC began running the new systems in March. Although Harnish said it is still too early to quantify the cost savings, he did point to several productivity gains.

For example, before the parallel processing environment, PNC chewed up two hours of CPU time to add a new set of loans to the system. Under the parallel architecture, these loans can now be entered in 30 minutes.

By shifting to parallel processing, PNC has reduced the time needed to update its loan portfolio and do its general ledger and other reporting from four hours to 1½

hours. PNC's parallel processing efforts are on the cutting edge of what banks are doing with host systems today, according to one analyst. "There is a lot of talk about parallel processing in banking today, but little has been done due to the heritage and emotional commitment banks have to their mainframe-centric legacy applications," said Richard Crone, senior manager of financial services at KPMG Paul Marwick in Los Angeles.

Replication falls short

Database vendors split on strategies but promise relief

By Kim S. Nash

Replication—the act of automatically copying and synchronizing databases in different locations—is key to enterprise client/server users who want to run database-intensive applications across remote sites.

But users beware: The major database players approach replication differently and to varying degrees.

And products for managing replication tools, like those for monitoring client/server applications, are sorely lacking, said Judy Davis, an analyst at Harwitz Consulting Group, Inc. in Watertown, Mass.

Computer Associates International, Inc.'s Ingres/Replicator manager, for example, is character-based and not integrated with Ingres' other systems management aids. Informix Software, Inc. lacks any replication management products whatsoever. However, Sybase, Inc. does offer both Motif and Windows replication managers.

Up and coming

"It's not a very mature technology yet, but it'll heat up next year. Right now, the players are all over the map in terms of what they support and what they don't," said Bobby Cameron, an analyst at Forrester Research, Inc. in Cambridge, Mass.

The replication scene should become more coherent between now and mid-1985 as Microsoft Corp., Oracle Corp. and others release promised products. Oracle, for example, plans to add optical resolution and graphical utilities for managing the process to the relatively basic replication capabilities of its Oracle 7 database. The features are in beta testing now and are due out in the first quarter of next year in Oracle 7 Release 7.2.

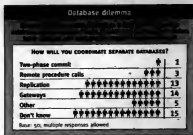
Ingres/Replicator, which CA inherited in a May takeover of The ASK Group, Inc., is probably the most muscular replication offering now available, Cameron said. But if Oracle fulfills promises it has made during the past year, it will catch up fast, he said.

Sybase has perhaps the best-known offering in this area, Replication Server. In fact, Replication Server helped drive the Alberta Ministry of Labour's decision in July to jettison Sybase's database over Oracle's for a sizable mainframe downsizing project, said Erv Krawchuk, director of systems at the Edmonton, Alberta, agency.

The Ministry needs to keep 17 sites in sync

across the province, tracking information such as which construction companies have permits to work on what tracts of land or whether contractors have approval to replace gas, electricity or plumbing equipment.

Replication Server requires Replication Server Monitor to watch and troubleshoot problems—a situation some users said they consider just one more add-on product that costs money. However, Sybase offers more advanced replication management utilities than



Source: Forrester Research, Inc., Cambridge, Mass.

other database makers, Cameron said. One client user said they were at the ability for a database to replicate is and from databases from competing companies. Right now, replication to rival databases is done via gateways and other middleware products. And that communication is only one-way.

For example, if Oracle is the master database, it can throw data out to non-Oracle databases, but it cannot receive information from those remote databases.

Promises, promises

Sybase has promised to ship two-way replication between Sybase's Sybase and IBM DB/2 databases by the end of the year. IMS and VSAM will follow during the first quarter of next year, said Mike Forster, president of Sybase's MDI gateway subsidiary.

Microsoft has vowed to add replication features early next year to both its SQL Server 6.0 database and the Windows NT operating system it runs on. SQL Server 6.0 is due out in January.

Those promises had better be kept, said Harley Arnett, chief information officer at Foster Dewey, Costello, a management group in Walnut Creek, Calif.

Replication would let the company keep a continuously updated copy of a given database rather than do nightly backups to a hot server. Arnett explained. The entire com-

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Industry groups fight IBM moves

Leasing firms ruffled by challenge to decree

By Mark Hasper

It is IBM, IBM's hammerlock on the computer industry has loosened in a pinch, and yet a group of trade associations representing an expanse of computer and communications companies are voicing antitrust concerns.

While that may sound anachronistic to some, it does not to hundreds of companies providing outsourcing, services and equipment leasing in competition with IBM. The focus of their worries is IBM's effort to terminate a 35-year-old antitrust provision — the 1956 Consent Decree — that restricts IBM's service and leasing practices.

Rivals take action

The latest opposition to IBM's efforts comes from CDLA, The Computer Leasing & Remarketing Association, formerly known as the Computer Dealers and Lessors Association. On Oct. 18, the CDLA filed a motion with the U.S. District Court of the Southern District of New York seeking to intervene in the case [CW Oct. 24].

IBM, after several years of keeping a low profile amid complaints that its outsourcing business violates the decree, went on the offensive last June in the same court seeking to abolish the U.S. Department of Justice agreement [CW, June 13].

Industry groups such as the CDLA, while acting for members' self-preservation, point out that as unleashed IBM could have an unfortunate impact on users be-

cause it would put some service companies out of business. Customers would have fewer service providers from which to choose and could be forced into the medieval computing practice of having to buy services and product from the same vendor, the groups said.

"The interests being represented here are also the interests of end users, who want to get the best prices available," CDLA President David Poisson said last week about his association's filing.

IBM does not see the future that way at all. It claims that it could provide users with better prices if it were freed from the restrictions imposed by the Consent Decree.

In its June filing, IBM noted that "in the 38 years since the decree was entered, there have been significant changes in circumstances that warrant termination of the decree" and that "IBM's position in the relevant industry has changed markedly from 1960 to today."

Some industry legal observers agree with IBM.

"There are a lot of people who do not doubt have 'settled' with IBM about IBM being able to subsidize their outsourcing business, credit business and equipment business, but [IBM is] no longer the dominant force in any of those," said Jay Westermeyer, a Washington-based attorney with Fenwick & West in Palo Alto, Calif.

Westermeyer pointed out that alliances such as IBM's pact to work out a common PowerPC platform with Apple Computer, Inc. and Motorola, Inc. underscore IBM's fall from dominance because IBM

Industry groups opposing IBM's efforts		
Association	Number of Members	Headquarters
CDLA: The Computer Leasing & Remarketing Association, Washington	260	
Computer & Communications Industry Association, Washington	36	
Independent Service Network International, Atlanta	Approximately 250	
Other industry groups opposing IBM's efforts		
<ul style="list-style-type: none"> • EDS Financial • AT&T • Comdisco • El Camino Resources • Hitachi Data Systems • Andahl • Tandem Computers • Univisys • StorageTek • Sun Microsystems • Seavast Baby Bells • AT&T • Northern Telecom • Bell Atlantic 		

is turning to its competitors to help overcome Intel Corp. and Microsoft Corp. forces.

Gary Rebeck, an attorney with Wilson, Goodrich & Rosati, also in Palo Alto, pointed out that opposition to IBM should nevertheless be taken seriously. A recent U.S. Supreme Court ruling in a case brought against Eastman Kodak Co. established the validity of independent service companies making claims against service controls exerted by product suppliers, Rebeck said.

The CDLA's opposition marks at least the third industry group to attempt to intervene in the case. In August, the Computer & Communications Industry Association filed a similar motion [CW, Aug. 22], and

before that, the Independent Service Network International (ISNI) also filed in defense of its members' interests (see chart).

Poisson said the CDLA is concerned that without the Consent Decree, IBM would be free to revert to its practice of 40 years ago of providing users with lease-only access to its equipment.

That would give IBM monopoly control of the leasing business because it would deprive today's leasing companies of the right to purchase and then lease IBM equipment, he said. If IBM gets what it wants, it might also get the right to buy back equipment from third-party lessors once leases expire, Poisson said.

Some silent, some loud

A few firms have been outspoken in their opposition to the Consent Decree, IBM's agreement with the Justice Dept. in 1956, in which, among them, as it Dallas-based outsource Affiliated Computer Systems, Inc. and Wayne, Pa.-based disaster recovery firm Sungard Data Systems, Inc.

Most individual companies have been silent, but the Consent Decree opinions to themselves. A spokesman for Hitachi Data Systems Corp., for instance, last week said his company would have no comment, although HDS has assigned a senior vice president, James Brody, to the matter. Claudia Betancourt, executive director of ISNI, explained the relative silence.

"You don't get a lot of people being vocal because they still want to keep good relationships with IBM," she said. "They still buy parts and products from them."

through a difficult search process.

Because of all the extra work and redundancies maintained, it is not unusual for each part number to represent several thousand dollars in annual costs for a manufacturer. In Navistar's case, the company had about 60,000 different parts located in different systems, Kartje said. Each individual part cost about \$5,000 per year to keep. Kartje said that with the PME product, his staff can organize and group similar parts.

Kartje said he expects CADi will reduce part search time from 30 minutes to five minutes. He also said he expects it will reduce the number of new parts generated by 5% to 10% because people will be able to find parts in the new CADi system instead of having to create new parts.

Users can search by selecting attributes of a part rather than using a selection menu. PME runs on Unix servers and supports desktops that run on Windows and the Open Software Foundation's Motif.

Pricing will range from \$50,000 to \$500,000, depending on the configuration and the extent of on-front services required.

Cadis gives parts management another try

By Rosemary Callahan

These days, Cadis, Inc. is hoping for second chances.

In the early 1990s, the Boulder, Colo., company, then known as Cadis Information Systems, bombed out as a provider of services and PC-based data management software to manufacturing companies. But last week Cadis took another shot and began shipping CADi Management Expert (PME), a new software package that uses a client/server design and provides data storage and management as well as high-level search capabilities.

The firm is again targeting manufacturing companies and will try to address a critical user issue: getting a handle on managing the thousands of different parts and parts numbers that often live in different systems.

So far, initial users are giving the effort a thumbs-up. Joe Kartje, an artificial intelligence consultant at Navistar International Transportation Corp. in Chicago, said his staff had given

up on finding a parts management system to replace a proprietary data retrieval system.

"Then the Cadis literature came across the desk," Kartje said. "This fills a definite need."

Venot Mohan, Cadis' president, said PME carries forward the concept of parts management the company initially tried to market as a services offering.

PME still requires up-front work on Cadis' part. The company scans a customer's data files and retrieves parts numbers. But once PME is loaded with customer data, users can retrieve information with front-end software that uses a point-and-click format.

Complex system

Parts management is often a critical and expensive issue at manufacturing companies, where it is not as common to see the same part listed under different parts numbers in different systems. With inefficient retrieval systems, it is easier for a user to create a new part — and duplicate a previous effort — than to go



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Teleport dials up client/server

By Kim S. Nash

Making client/server work isn't the result of one easy, do-or-die decision made in the depths of a data center. Client/server success creeps up slowly, a matter of a million everyday choices.

And Teleport Communications Group knows it.

The New York telephone company has spent the past five years migrating from Digital Equipment Corp. host-based information systems to a distributed scheme spread over 19 cities and based on Sun Microsystems, Inc. hardware. And in the midst of the project, Teleport had a database change of heart, switching from Oracle Corp. to Sybase, Inc.

"Client/server turned out to be our direction, but when we started we just were looking for technology that worked for us," said Patrick Socci, vice president of information services.

System switch

Teleport's transformation involved moving from a combination of Digital's flat-file RMS databases and Oracle's relational databases on Digital VAXs to Oracle on various Unix machines. But when data volume grew to 250 bytes, the

Teleport Communications Group

Challenge

Speed up processing times as data volumes grow beyond 250 bytes, monitor client/server activities

Major technology

19 Sybase SQL Server databases, Sybase Replication Server, six six-processor Sun servers

Results

Faster processing, ability to better troubleshoot problems such as I/O bottlenecks, downed networks and database crashes

system started huffing and puffing, Socci said, and the company began swapping out Oracle for Sybase.

Order processing, equipment inventory and other customer service applications slowed down as Teleport started to serve more territories, he explained. The company provides dial tones primarily for businesses in 19 U.S. cities, including San Diego, Seattle, Chicago, Boston and New York.

Teleport's then-parent company, Merrill Lynch & Co., decided to standardize

on Sybase's SQL Server for several reasons, Socci said. SQL Server offers a smoother, faster architecture and is easier to use than Oracle, he said.

End users now have faster access to database information, said Emilio Portelli, Teleport's director of engineering for New York City. For example, reports summarizing data on customers waiting for phone service on a given day used to take an hour or more to process under Oracle, Portelli said. But Sybase, combined with more efficient hardware, gives him "instantaneous access," he said.

The switch to Sybase then led Teleport to its next decision: new hardware. The firm chose Sun's SPARCstations and SPARC servers to replace Unix and proprietary boxes, mainly as a result of Sybase's priorities. At the time, Sybase consistently brought out fresh releases and new products on systems from Sun before any other hardware.

Now all operating applications — from order processing to phone service installation to network monitoring — run on Sybase SQL Server Version 4.32, accessed by 700 users nationwide. Customer

er billing, the only application that remains on a Digital VAX running Oracle, is due to be migrated sometime next year.

Socci and his IS team negotiated a deal with Sybase that lets Teleport run SQL Server on whatever hardware it wants for a single price. Usually, database makers bill users for moving licenses to hardware not stipulated in the contract or charge different prices for different platforms or operating systems.

"The only weakness we find now with Sybase is lack of availability of tools," Socci said. "But Sybase is committed... to fill that void." So sure is Socci that Sybase will deliver on promises to ship its already-late Bell Momentam development tool kit before the end of the year that he recently held off on buying similar products from Powersoft Corp.

His reasoning? Regardless of when they ship, Sybase's tools will no doubt be more integrated with the Sybase database than any other tools could be.



Teleport's Patrick Socci: SQL Server is smoother, faster and easier to use than Oracle

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Product short

Genesis Software Systems, Inc. has announced the *Genesis Enterprise Series* for Sybase's SQL Server 10, a client/server human resources, benefits and payroll application for open environments. The product is based on a three-tiered client/server architecture and runs on Sun Microsystems, Inc.'s SPARC-based computers. Cost: Starts at \$125,000. **Genesis Software Systems, Methuen, Mass. (508) 685-5400.**

Boole & Babbage, Inc. has announced *Command/Post Connect MVS*, a mainframe interaction enhancement product.

According to the San Jose, Calif., company, *Command/Post Connect MVS* tightens integration among MVS host systems and other computer and network equipment and applications managed by Boole & Babbage's *Command/Post* product.

The product automates the MVS master and service processor consoles and processing, performs host heartbeat checking and provides remote console support.

Replication

CONTINUED FROM PAGE 65

pany runs on 12 copies of SQL Server and 18 Windows NT Advanced Server machines, he said.

Informix has thus far shied away from full-blown replication, although its *Informix-OnLine* and *Informix-SSE* databases do allow some comparatively rudimentary database copying.

Among the differences users should watch for are options for incremental

replication, Davis said. Oracle and IBM offer the choice of replicating a full table or database or just the information within that table or database that has changed, Sybase does not.

Another differentiator is push vs. pull replication. IBM uses pull replication where remote sites seek out data they want from a master server. Sybase, meanwhile, uses the push approach, which calls for a master to shove changed data through the network to remote sites. Push replication allows event-driven replication. Pull replication produces less network traffic.

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Briefs

HR software released

Software 2000, Inc. formally introduced object-oriented human resources software for client/server users with the *AS/400* after starting beta testing in September (ENR, Sept. 29). The *InfraLinkHR* software supports Windows and OS/2 clients and is scheduled for general availability by year's end, with prices starting at \$66,000 for the server package and \$1,500 for client licenses. The human resources package will be followed by an *InfraLink* financial series that should be ready for beta testing in mid-1996. **Software 2000 said.**

IBM seeks buyer

IBM said it is looking for a buyer for all or part of its *Havant, England*, disk drive plant, which already markets manufacturing services to other companies. A management buyout is among the options being considered.

Acquisition completed

Cray Research, Inc. completed a \$10.4 million acquisition of the *Minnesota* *Supercomputer Center, Inc.*,

a research facility previously owned by the University of Minnesota. The center will continue to operate with most of its current employees, Cray said.

Into the fray

The client/server applications market may be chock-full of players, but that did not stop *Global Software, Inc.* from officially jumping in. The mainframe accounting software company, which has built up a base of about 750 customers since the 1970s, announced it will sell the *Universal Series* client/server financial software from *UX-based Quality Software Products Ltd.*

Storage market expands

Cambex Corp., which currently sells mainframe memory boards and disk arrays for IBM's *RS/6000* Unix systems, said it plans to ship a scaled array for mainframes during the first half of next year. A redundant array of inexpensive disks Level 5 subsystem will be added later, although Cambex officials would not say when that product will be available. Cambex claims to have sold more than 100 of its *RS/6000* arrays, mostly for use with high-end commercial servers.

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Object Interoperability

Users give nod to likely OMG outcome

But OSF supporters still claim committee proposal for optional bridge to DCE is insufficient for object standard

By Melinda-Carol Ballou

As the Object Management Group (OMG) closes in on a decision about how its object standard will interoperate with other object models, users said they are satisfied with the approach the group will likely adopt and are relieved the battle is almost over.

"The fight that started a few weeks ago ought to be a small blip in the process," said Michael Brodie, senior staff scientist at GTE Labs in Waltham, Mass., a subsidiary of GTE Corp. "Those vendors ought to get their act together to serve their users."

However, there are some lingering arguments. Although the OMG will probably vote on a TCP/IP-based approach to interoperability for its Common Object Request Broker Architecture (CORBA), proponents of the Open Software Foundation's (OSF) Distributed

Turkey time

Out of 52 votes regarding the OMG's interoperability standard, all are in favor of the TCP/IP-based approach proposed by the OMG technical committee. There are 14 votes against and 17 abstentions according to the OMG's count at press time. The rest are undecided. OMG officials expect those in favor of the proposal to prevail with a two-thirds majority by Thanksgiving.

Computing Environment (DCE) are still grumbling that they want equal billing.

What's it about?

CORBA is an emerging standard that acts as a kind of object traffic cop across platforms to enable developers to easily distribute objects. About 470 companies, including key systems vendors such as IBM, Hewlett-Packard Co., Sun Microsystems, Inc. and Digital Equipment Corp., are OMG members. Last month, the OMG technical committee voted to recommend an interoperability standard for CORBA that uses a mandatory application programming interface based on the TCP/IP protocol. This vote supported adoption of the Universal Network Objects (UNO)

proposal backed by Sun, IBM, Excerpt Corp. and others.

The committee's recommendation also said UNO must include an optional bridge to the OSF's DCE. Key OSF backers include Digital, HP and IBM.

But some DCE proponents said this optional bridge is insufficient because the technology to make DCE and UNO interoperate is not

teroperability, said Robert Bismuth, director for corporate standards at Digital. He added that end users have not had a chance to meet and come up with a consensus on these issues.

Fair enough

However, six out of seven customers reached by *Computerworld* agreed that the current proposal is an acceptable compromise.

"Because the end-user community is diverse, there have to be options," said Peter Walker, end-user representative to the OMG and an analyst at a UK-based telecommunications company. "The DCE option is not eliminated; it's simply not mandatory," Walker added.

Chris Stone, president of the OMG, said the DCE group is "watching defeat out of the jaws of victory" by saying "they lost and we won, and it isn't fair."

"It looks as if Digital and HP were trying to steer things toward getting more acceptance for solutions that they've put into the market already," said one developer who asked to not be identified.

"I think the Digital/HP coalition is 80% politics and 20% technical," the developer added.



available and has not yet been specified. Further, they said, the DCE-based proposal would offer end users more choices. DCE runs on top of a range of network protocols other than TCP/IP, including Open Systems Interconnect and Novell, Inc.'s SPX.

"We'd like DCE and UNO to be peers and have support for one of them be sufficient" for CORBA in-

Andersen ready to fly with Project Eagle

Object-based client/server initiative set to launch

By Ellis Bookar

Proof positive that object technology has entered the mainstream is the fact that leading systems integrator Andersen Consulting is set to launch a major practice around it.

Andersen has spent more than \$25 million during the past three years in a client-server, distributed, object-based computing initiative known internally as Project Eagle. The fruits of Eagle have included the development of in-house expertise in object technology for commercial business systems and the creation of pilot applications ranging from order entry to workflow.

In fact, Andersen is just one of a list of systems integrators racing to deliver object know-how to a market increasingly ready to deploy it.

Other integrators with object groups include American Management Sys-

tems, Inc. in Arlington, Va., IBM, Electronic Data Systems Corp. and S&L Systemhouse Inc.

Andersen executives said they will target vertical industries next year. Possible segments include financial services, health care and telecommunications, although the consultancy has not made a definite decision on its strategy.

Andersen's Advanced Systems Development Group is the site of much of its push into object technology. The laboratory has been visited by some 73 users to date.

Vi Besoudreaux, director of advanced technology at ITT Hartford Life Cos. in Hartford, Conn., has been through the lab twice this year. Andersen is one of a number of vendors and integrators he talked with as part of The Hartford's object efforts.

The insurance company does not plan to develop every last item of its object-

based applications in-house. For instance, the company is piloting a third-party workflow system that may eventually be added to The Hartford's enterprise class libraries.

Andersen is just one of a list of systems integrators racing to deliver object know-how to a market increasingly ready to deploy it.

Andersen's approach is stick, said John R. Rymer, editor of the "Distributed Computing Monitor" at the Patricia Seybold Group in Boston. "They have networked agents, workflow and event management in the mix as a part of the architecture," he said.

Staffed by a team of 75, Andersen's Advanced Systems Development Group is focused on developing and simulating its first object-based applications in March and now has two up and running in pilot form. The second rounds about 30% of the first for a sevenfold productivity gain.

Waste not, want not

Andersen's target is to build 60% to 80% of applications out of "reusable components." A component is a larger object, such as a reservation system, built out of simpler objects.


"We can use this gain for margin or as a space to put more functionality in our applications," said James P. Adamczyk, one of the two partners in charge of the Advanced Systems Development Group.

"What used to be the labor in systems integration is being encapsulated in code, in objects," explained Angela Hye, client/server program manager at Input in Mountain View, Calif. "Instead of using people, [integrators] will reduce their development of substituting objects and components for labor."

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"SYBASE IS A CONNECTIVITY POWERHOUSE."

— Forrester Research, Inc. —

The analysts agree on Sybase leadership. Here's more from Forrester: "Oracle" falls way behind on the connectivity front.



Sky's not the limit with 3-D geographical software tool

By Eric Cullum

Sieve d'Apollonia is doing work that is out of this world.

At least it will be out of this world early next year when the Canada Center for Remote Sensing launches a new satellite. The image-processing application d'Apollonia created will put the satellite's images into a database that users can access to order pictures of particular regions or to plan orders from upcoming orbits.

d'Apollonia, president of Dataquest, Inc., a small software development company in Dartmouth, Nova Scotia, is doing the job, with Hipparchus, a library of geographical software tools from Geodyssey in Calgary, Alberta. The software can be used to develop applications that do everything from mapping ocean surface temperatures to turning a marketing database into a color-coded representation of customer locations.

Gang be for Hipparchus

Hipparchus's flexibility and ability to let users customize applications are what sold d'Apollonia.

"Most of the [geographic information systems] software out there doesn't allow you to customize," d'Apollonia said. The real time-saver "is that the library comes with a variety of really flexible geographic functions," he explained.

d'Apollonia estimated that Hipparchus will reduce his development time from eight months to three. "It comes with a library of math functions that saved me from having to calculate all that stuff myself," he said.

Hipparchus works by providing a full library of C++ and geographic functions that developers can use to link to any proprietary or off-the-shelf database management system and graphical user interface, including Microsoft Windows NT and IBM's OS/2. The tool's spatial information engine

lets users make complex queries against the database to produce three-dimensional geographic data models.

Joe Breslawski, president of third-party software developer CD DataCo, Inc. in Calgary, said he might find using Hipparchus with the Windows operating system a bit challenging. His company's



Geodyssey's Hipparchus tool library has a spatial information engine that lets users make complex queries against databases to produce 3-D geographic data models.

retrieval engine uses Hipparchus with Windows NT.

"It took a lot of teamwork to get Hipparchus to work with NT," Breslawski said. "If you're scared of NT, you'll probably be scared of this tool kit."

Unusually robust tool

But the way Hipparchus treats three-dimensional images makes the product unique and powerful, according to Breslawski.

"People are used to thinking of databases in terms of blocks and squares.

Hipparchus thinks of them in terms of honeycombs. It takes a while to ramp up before you understand how it's working. But once you do, it's very robust," he said.

Cathy Hale, an analyst at Dataquest, Inc., in San Jose, Calif., said Geodyssey may have found an emerging market. "The problem is that no one wants to take the time to develop a GIS application themselves," Hale said.

Little need

The bulk of the need right now, according to Hale, is in the independent software vendor community. As a rule, "the market is not at a place right now where end users are looking for GIS tool kits," she said.

James Rappinich, president of Dursbach, Inc. in Cambridge, Mass., agreed. "Whether there will be a higher demand among corporate end users for GIS tool kits depends on how well companies like Geodyssey can move past the 'gee-wha' factor and demonstrate the real value of their application development tools," he said.

"A product like Hipparchus can add a lot of value to the teams and teams of usable data that often resides in large databases," Rappinich added. "GIS can prove very effective in terms of payback."

Briefs

Warehouse vendors unite

SHL Systemhouse, Inc. announced a marketing alliance with several data warehousing companies last month to sell their various tools. The alliance, which was dubbed Diamond, will promote a best-of-breed approach and includes Information Advantage, Inc. Prism Solutions, Inc. and Informix Software, Inc.

Consultants form start-up

Three principal consultants at Oracle Corp. announced last month that they have left the database company to form their own company. Based in San Mateo, Calif., The Nightingale Group will enter to users with databases of 500 bytes or more.

Help for DBMS scaling

Informix Software and Cray Research, Inc. are working to provide support for very large database scaling using the Informix-OnLine Dynamic Server 7.10 database and the Cray Superserver 4400 symmetric multiprocessor.

Borland bundles tools

Borland International, Inc. recently announced a bundle of its C++ 4.3 development language with the Borland Database Engine 2.0 database library and SQL Links 2.0 for Windows interface to various back-end relational servers. The package is priced at \$799, a savings of \$105 vs. buying the products separately.

Current Borland C++ users can buy the bundle for \$249.95. Users of Microsoft Corp.'s Visual Basic or Visual C++ or Powersoft Corp.'s Watcom or Symantec Corp.'s C or C++ JavaKit trade in for \$299.95, according to Borland.

Cincom to resell Easel tool

Cincom Systems, Inc. said recently it will resell Easel Corp.'s Object Studio tool set as its strategic tools offering. Easel said it expects this deal to generate upward of \$20 million during the next five years.

Oracle grant to benefit kids

Oracle announced recently a \$1 million grant program for software developers and content providers to create interactive educational software for grades K through 12.

provided that the products are built with Oracle's media objects scripting tool. Oracle plans to give \$25,000 each to 20 developers in February 1995 and \$100,000 each to five firms in April, the company said. Interested parties should call Theresa Baker-Hancock at (415) 596-4403.

Qualix offers migration aid

Qualix Group, Inc., a San Mateo, Calif., maker of client/server database add-on products, recently announced a \$16,000 set of utilities to help mainframe users migrate systems to Oracle's Oracle 7 database. The product is called Smart DB Workbench.

Ontos unveils tool suite

Ontos, Inc. earlier this month introduced integration services, an object-oriented framework and tool suite that extends the company's object-oriented database. The Ontos Virtual Information Architecture (Ontos VIA) allows applications built with GUI-based tools to share data on the front and back end. New with this release is Object Integration Server for Sybase, Inc.'s database, which will provide object-oriented access to Sybase's database.

Data View

CLIENT/SERVER TOOLS MISSING IN ACTION

Application development managers were asked to name their major problems

Systems and network monitoring	30%
Need for better development tools	27%
Systems and network management	24%
Testing and tuning	13%
Change and configuration management	11%
Need for better standards	6%
Design and project management	6%
Version control	6%
Training	5%
Security	5%
Archive, backup and library	2%
Software licensing	2%
Other	36%

BASE: 120 (MULTIPLE RESPONSES ALLOWED)

Source: International Data Corp., Framingham, Mass.



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The specific needs and experience level of every client—from new computer users to seasoned pros—are met through personalized interfaces. Take advantage of icon-based executive information systems, point-and-click

menus for business analysts, an object-oriented applications development environment, or a full-screen display environment just for programmers.

Diverse Computing Platforms

The SAS System maximizes the effective use of your entire computing mix—from PCs and workstations to minicomputers and mainframes. You'll have true hardware independence—without sacrificing your ability to exploit the particular advantages of specific environments. Plus the ability to implement cooperative processing by segmenting applications any way you choose.

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Application Development

Trinac Corp. has announced **Alon Developer: r1 System 6.4**, a visual development environment for building business-process automation applications.

According to the Palo Alto, Calif., company, **Alon Development System 6.4** leverages Windows and OS/2 environments and supports Microsoft Corp.'s Dynamic Data Exchange.

Applications built with the product can be ported to mainframe or midrange platforms, including MVS, IBM's AIX and Sun Microsystems, Inc.'s SunOS.

Alon Development System 6.4 costs \$9,000.

► **Trinac**
(415) 328-0595

ACI US, Inc. has announced **Object Master for Windows**, an integrated, cross-platform programming tool for writing and organizing C and C++ source code.

According to the Cupertino, Calif., firm, **Object Master for Windows** lets Windows and Macintosh programmers use the same project interchangeably on both platforms.

The product includes a source code editor, a project window, a browser and a class tree window for users to view different parts of the class tree simultaneously. Each file is parsed as it is added to a project and is included in a data dictionary.

Object Master for Windows is priced at \$248.

► **ACI US**
(408) 252-4444

ARSoftware Corp. has announced **Arc++ 2.0**, a C/C++ development tool.

According to the Landover, Md., company, **Arc++** eliminates unnecessary recompilations resulting from header file editing.

An intelligent macro capability automatically analyzes class definitions and is capable of being inherited. Other features include overloaded enumerators, automatic functions, modify detection and hidden arguments.

Arc++ 2.0 costs \$69 for DOS and Macintosh and \$129 for Unix.

► **ARSoftware**
(301) 459-3773

ViewSoft, Inc. has announced **Utah 1.1**, a C/C++ application development environment for graphical user interfaces (GUI).

According to the Provo, Utah, company, **Utah 1.1** lets developers interactively create GUIs without adding interface dependencies to program objects or writing interface code.

The product transparently performs type conversion and synchronization of interface objects with program data whenever an interface or program variable changes. Developers can use their C/C++ compiler of choice to turn the prototype GUI into a finished product.

Utah 1.1 costs \$1,490.
► **ViewSoft**
(801) 377-6757

Mellito Consulting, Inc. has announced **Exemplar**, a main page and source code browser.

According to the Somerset, N.J., firm, **Exemplar** is a **Motif/X Window System** client that provides an integrated view of main pages with associated example code fragments.

Features include point-and-click access to related include files, "see also" lists, a library of source code examples, the ability to cut and paste examples to

standard Unix editors and the ability to filter main pages by standards compliance.

Prices start at \$275.
► **Mellito Consulting**
(908) 873-0073

VI Corp. has announced **X Designer 4**, a cross-platform, graphical user interface builder for **Motif** and Windows applications.

According to the Northampton, Mass.,

company, **X Designer 4** includes a Windows mode for Windows development that can generate Microsoft Corp. Foundation Class Library code and be compiled with native Windows tools.

The product generates C or C++ code, provides hypertext help and includes an unlimited undo feature and a compound string editor.

X Designer 4 costs \$3,500.
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DIGITALTALK

The perfect network for a product today than

Let's see if we've got this right. IBM and Microsoft are clamoring to sell you your next network operating system, but there's a small glitch. Their operating systems aren't quite ready yet. In fact, they can only deliver 2 of the 7 services a network needs to perform today. In the meantime, how does a promise to offer you a full service system somewhere down the line sound? Are they kidding?

FEAR OF THE UNKNOWN IS A HEALTHY THING.

If banking on a promise makes you a little nervous, you're smart. After all, we're talking time and money here. So consider this: although networking today requires more than just file and print, those basics are all IBM and Microsoft can deliver right now. (And even those aren't up to NetWare standards.) In the meantime, networking with 32-bit NetWare 4 has evolved to create distributed systems that speed

NETWORK USERS, THE VOTE IS IN.

IDC Jan-June 1994 Server Network
Operating Systems Node Shipments*
Novell: 72% / Banyan: 7% / Microsoft: 7% /
IBM: 7% / DEC: 3% / Others: 4%



Novell

timely information directly to the people who need it. At the moment they need it most. That kind of feat demands a proven product, not just a promise. And right now Novell's NetWare 4 is the only one that can deliver.

COMPARISON SHOPPING MADE EASY: WE'VE GOT IT, THEY DON'T.

Networking today means being able to hook up with people and information anytime, anywhere with a single login. Performance like this requires seven crucial services from your network. The chart on the right shows you how Novell stacks up against the competition in each of these areas. Here's the scoop on what these services could be doing for you now.

The directory service allows you to simply log in to the network once to get the info you need the moment you need it. No more looking for data in all the wrong places.

Built-in messaging lets you use most of the popular groupware packages such as E-mail, calendaring and others. And because it uses the same directory as the network operating system, you're blessed with a single-point-of-administration.

Multiprotocol routing with NetWare gives you software-based routing (no new hassles, no new hardware) for connecting your network with the rest of the world. That way, you get the info you need anytime, anywhere. And you can collaborate with anyone, anywhere.

Network management with NetWare 4 lets you manage your entire network from a single-point-of-administration.

NEXT GENERATION NETWORK SERVICES. READY OR NOT?

Services	Novell NetWare 4	Microsoft NT Server 3.5	IBM LAN Server 4.0
1 Directory	Yes	No	No
2 Integrated Messaging	Yes	No	No
3 Multiprotocol Routing	Yes	No	No
4 Network Management	Yes	Limited	Limited
5 Security	Yes	Limited	Limited
6 File	Yes	Yes	Yes
7 Print	Yes	Yes	Yes

And our graphical MS Window's management tools reduce repetitive, multi-step tasks to a simple click of a mouse.

Security with NetWare 4 allows administrators to control access to sensitive information within a distributed environment. In fact, it was designed to meet the National Computer Security Center's Class C2 Network Security criteria.

And last but not least, file and print. Only NetWare 4 offers data migration, suballocation and compression so you won't have to buy extra hardware like

people who'd rather buy a promise tomorrow.

the other vendors require. Simply put, our file and print services beat IBM and Microsoft cold on both performance and cost.

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NetWare 4 doesn't just sound good, it works. And there's nothing like months of solid performance and happy users to prove it. Folks tell us NetWare 4 is a product they can count on today as well as tomorrow. Others report that it has given them stability and performance, and has proven itself in business critical applications. Quite simply, NetWare 4 is doing everything our customers need it to do. Now.

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IS teams encourage collaboration and creativity among staff members.

But IS managers must learn how to mediate between warring personalities to win at their own version of . . .

Family Feud



Illustrations by Scott Phillips



By ROCHELLE GARNER

Darren Franchow was not pleased. Instead of the collaboration and creativity he had envisioned for his newly formed information systems teams, he saw bickering, withdrawal and anger.

Strong-willed personalities ran roughshod over their shier teammates at CompHealth, Inc. Members less comfortable with conflict withdrew into silence and noncooperation. Feelings were rubbed raw, work stalled and peer evaluations became opportunities for revenge.

Admittedly, Franchow had screwed up. His blunder: He hadn't prepared his Salt Lake City staff for the behavioral changes successful teams require. "Teams force a closeness and a

camaraderie that some people feel uncomfortable with," Franchow acknowledges. "I didn't give them enough time to adjust."

He didn't make the same mistake twice.

Nor did he give up on teams. For Franchow, the team approach is essential for tackling the many-layered challenges of client/server. That's why this past February, when he assumed his new post as director of IS for Salt Lake County, Utah, Franchow put out the word that the new order of business would be teamwork.

Two months later, he'd reshaped the county's help desk into its first IS team. Soon after came project teams, function teams and teams distributed to the hinterlands of the county to work directly with customers. And it's working. Teams are taking on responsibility, customers are happier, and staffers are energized with creativity.

Family Feud, page 88

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Family Feud

CONTINUED FROM PAGE 55

The difference between the two organizations: Franchow has reassigned his role as manager—but with a twist. Instead of the management norm of listening directives to his staff, he now mediates between warring personalities. This can be unfamiliar territory for IS managers, but mastering this new role is critical if the team is to succeed. IS executives must learn how to temper the domineering and draw out the reticent. "Teams really change the nature of the manager. You have to train, coach, facilitate and plan," Franchow says.

Hard lessons, but necessary ones. In the process, Franchow has learned to deal with the human foibles that can undermine a team through subversion and intimidation. His experiences serve up valuable object lessons to others testing the teamwork waters.

The reason? Teams nearly always cause emotions to well up and breed hard feelings that many IS technologists are ill-equipped to deal with. Ignore those emotions and your teams will become a rolling mass of unrestrained egos, passive aggression and noncommunication. And then they fail.

Madelen Weiss, president of Weiss Associates, Inc. in Bethesda, Md., puts the blame squarely in the manager's lap. "If the team isn't working, the fault primarily lies with the coach," she says. "You need to have the coach negotiate who will do what, who will make what kinds of decisions, and as the team becomes more confident, the manager must let go of those decision-making roles. The development of the IS team coach is absolutely critical for success and must begin long before the team is set up."

DON'T GET MAD, GET EVEN

Integrating team dysfunction has a pattern: Extroverts try to take over. Introverts either withdraw into a shell or resist through passive/aggressive subversion. Guess which personality causes bigger problems?

"It's the passive/aggressive type you have to worry about because they won't tell you what's going on," Franchow says. "Extroverts are vocal, so you always know what's happening."

What's happening is a million of egos. On one side, you have the domineering engineer who speaks his mind no matter what; on the other, the reticent analyst, whose ego is the match of anybody else's. Now try to merge an idea—just try.

"You keep running into the attitude of I have more experience than you. How dare you try to tell me anything," says Robert J. King, vice president of managed care and employee benefits at The Travelers Insurance Co. in Hartford, Conn.

As head of The Travelers' rapid application development efforts, King relies on small project teams. King says he has seen the phenomenon time and time again. Left unchecked, it leads to what King calls "subtle noncompliance, or un-

willingness to participate."

And it brings projects to a halt.

What we have here is a failure to communicate. And one reason that failure exists is a basic lack of respect for others. You've probably seen similar scenarios. A data analyst accustomed to being king of the hill views with contempt any lesser mortal unfortunate enough to have fallen into, say, networking or PC support. If you want your teams to succeed, you have to nip that attitude. Fast. Enter the Meyers-Briggs test of how individuals make decisions—your mental processes—and other tests like it. Think of it as an aptitude test for teams that reveals to members how others use intuition or analysis, for example, to solve a problem. The next step is applying that information.

“A high-performance team is a team that exceeds its objectives, going out of its way to do what's expected and to be creative in figuring out better ways to do their jobs. They act like owners.”



—Madelen Weiss, president of

Weiss Associates,
Bethesda, Md.

EARLY WARNING SIGNS

Managers need to be concerned about the direction IS teams are taking when the following traits emerge:

- Extroverted team members try to take over
- Introverted team members don't participate
- Strong emotions dominate discussions
- Members subtly refuse to comply with or resist team goals
- Deadlines and decisions are delayed
- Discussions about the team's progress become cynical

tion or analysis, for example, to solve a problem. The next step is applying that information.

"We use Meyers-Briggs to focus on each individual's differences," says Carol Smallback, one of four coaches in the technical services group at Corning, Inc., a well-known practitioner of IS teams in the U.S. "Those differences show how people can complement each other so we can build trust within the team."

ROLE-PLAYING AS A TOOL

But building such trust requires more than merely understanding that Joe in networking solves problems differently from Fred in PC support. And that's where Corning goes beyond many computer efforts.

Meyers-Briggs information in hand, Corning's IS staffers work through four-hour training sessions that have members play roles, solve hypothetical problems and listen to one another.

"If the team's in a problem-solving mode and you feel the team hasn't looked at the data yet, we say Joe's the data gatherer. We need to listen to Joe!" Eventually, they develop trust because they know what motivates each other. "Small-back says.

That's exactly what happened at Salt Lake County," says Russ Stout, a systems programmer who led a short-draw on-pilot project to see if a client/server architecture would benefit the county.

According to Stout, the team was marked by cooperation and communication. "Everyone understood the sense of urgency for the project, and one of the reasons we worked so well was that our IS director had communicated that failure of the project was something to be avoided. And upper management constantly emphasized how we should work together and communicate," he says.

Stout says members entered the team already respecting one another's expertise and capabilities because of the care with which Franchow had chosen the team members.

Such trust and mutual respect are the foundations of a functioning team. But they won't, by themselves, prevent squabbling. After all, you're dealing with IS professionals who have a remarkably low need for human interaction, according to Bob Zawacki, KPMG Post Marwick distinguished scholar in residence at the University of Colorado at Colorado Family Feud, page 60

COACHES:

- Learning why transferring power is critical
- Identifying the tendency to hold on to control
- Improving communication skills
- Learning how to teach others
- Using performance evaluations as teaching opportunities

TEAM MEMBERS:

- Practicing peer evaluations
- Using evaluations to reinforce the team mind-set
- Practicing budgets and scheduling
- Improving communication skills
- Learning to constructively accept criticism



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Family Feud

CONTINUED FROM PAGE 58

Spring. He bases that belief on more than 20 years of researching IS personality characteristics.

Two traits stand out, Zawacki says: a strong need to grow and be mentally challenged — hence the attraction to new technology — and a low requirement for socializing. Together these traits create a person who prefers to work alone.

More significantly, it's a personality unaccustomed to critique, which is the hallmark of brainstorming. The result: "People don't know how to relate to each other in groups," says Frank Petersmark, technical services manager at The Amerisure Cos. in Springfield, Mich.

OPEN YOUR MOUTH

Petersmark, who manages a 17-member customer support team, found that his biggest challenge was getting members to talk to one another.

"At first, everyone has hard feelings. If it was an outgoing person feeling hurt, there'd be bickering. If it's someone less so, he will come to me to complain to Dad. Sometimes I tell him to go to the 'talking in Wally and the Bears'," he says.

After three years, though, Petersmark now has a team that works well together. That doesn't mean team members don't argue, mind you — it's just that now they understand the rules better. "At first, everyone is this-skinned, and they go out of their way not to [upset] anyone," Petersmark says. "Now we are at the point where we can say, 'Hey, what are you talking about?' That creative tension is necessary for getting things done."

Experts agree with Petersmark. They

also agree it takes people time to reach this stage where they can have their ideas as criticized without taking it personally. "Squabbling is an inevitable state that teams go through, and it is a stage that people must go through," Weiss says.

According to Weiss, teams that don't learn to deal with conflict never reach the high-performance stage. But achieving that stage is a balancing act in which

delayed and timeliness suffer as her Green Bay, Wis., colleagues struggled with the team concept. One problem: There's no mechanism to pull everyone together.

"We got graded on our project's success, not on whether we pitch in to help someone who's in trouble," Swingle says. "That brings everything to the level of 'What's in it for me?'"

"It's the passive/aggressive type you have to worry about because they won't tell you what's going on. Extroverts are vocal, so you always know what's happening."

—Dorcas Franchow, director of IS, Salt Lake County, Utah

managers hold primary responsibility. How? "You have to coach them so that they gain better ideas the team can work with," Franchow says. "They have to give up their ownership and assign that idea to the team, and that's difficult for people to do."

Not surprisingly, staffers won't do that if there's no overriding reason to. That reason is a common bond.

JUST REWARDS

Just ask Tom Swingle, one of 17 people on Schroeder Road's application development team. In the past year, since his watched productivity fall, decisions be

What's in it for them is a kind of management schizophrenia, where professionals are told to work together — but not too much. Worse, there's no common goal for members to hang on to. Sure, they all want to look as good to the customer as possible, but that's as abstract as the usual platitudes companies throw around, such as "improved customer satisfaction."

Swingle knows those just don't cut it. "The team approach isn't working as well in IS as it is in the rest of manufacturing because we don't have one unifying goal," she says.

Franchow learned that lesson the hard

- Organize small teams around functions
- Have a unifying goal for the team
- Keep goals simple and narrowly defined

way. That's why he's organizing small teams around functions, such as databases, networking, Unix and graphical user interfaces. At Corning, teams are organized by tasks such as customer support and mainframe operations. And at The Travelers, six-person rapid application development teams have a specific focus and premeditated duration. In each case, the goals are defined enough and narrow enough to remain in each member's line of sight.

And what if you can't think of a common bond? Then don't set up a team, says Linda Moran, an executive consultant at Zeigler-Miller, which is based in San Jose, Calif. "Especially in IS — where people often choose that profession because they don't like working with others — you don't want to create teams for teams' sake," Moran says. "Without that common bond, teams just can't be effective."

Gardner is a free-lance writer based in San Carlos, Calif.

Executive

Track

The Leading Hotels of the World Ltd. in New York has announced the appointment of Norbert J. Kubilus to the position of vice president of operations. He will report to Joseph A. Giacomponella, president and chief executive officer.

Kubilus will be responsible for the hotel chain's worldwide information systems, communications network and reservation operations. He will also direct the ongoing development and implementation of the information technology infrastructure for all Hotel Representatives, Inc. companies, including The Leading Hotels of the World, Prima Hotels and DataLead Communications, Inc.

Previously, Kubilus was vice president and chief information officer at BCM, Inc. in Pennsylvania. He has held similar posts at the Educational Testing Service and National Data Corp.'s Network Services Division.



Amot Patel, 27, has been promoted to director of advanced technologies at BASF Corp.'s U.S. headquarters in Parsippany, N.J. He runs the 10-person advanced technology group, which explores how technologies can improve operations for the company. Previously, Patel was a senior project manager for emerging technologies at BASF.



RCI Management, Inc. in Corona, Calif., has announced the appointment of Ron Oggs as director of IS. Oggs has worked in IS at Baxter Healthcare Corp. for 13 years. Prior to that, he managed data center operations, operating systems software and database administration at Redtek Laboratories, Inc.



Data Documents, an Omaha manufacturer of business forms and pressure-sensitive label products and services, has announced the appointment of **Charles L. Bauman** as vice president of

MIS. His responsibilities include directing all data processing activities and IS and developing internal and customer-related systems applications. Bauman has worked at Data Documents since 1984. He was previously director of MIS.



Rubbermaid, Inc. in Woonsocket, Ohio, has announced the appointment of **Michael E. Naylor** to the new position of senior vice president of operations. Previously, he was senior vice president of technology and environment at the company.



MCA/Universal in Universal City, Calif., has announced the appointment of **Michael Gallella** as director of IS audit. He will report to Terry Riegan, vice president of corporate internal audit. Prior to the appointment, Gallella was electronic data processing audit manager at MCA.



Micro Modeling Associates in New York has announced the appointment of


Michael B. Parker as president. Previously he was managing director at Bankers Trust Co., where he was responsible for all technology functions supporting the bank's derivatives, finance and advisory businesses as well as for setting future technology architecture and direction for the bank's financial services businesses.

Middlebury College in Middlebury, Vt., has announced the appointment of **Sam Ellis** as CIO. He will report to the college president.



Ellis will be responsible for developing a comprehensive vision and strategic plan for the use of information technology and for the creation of an enterprise-wide technological infrastructure. He will oversee academic computing, administrative data processing, telecommunications, media services and library systems.

Ellis was previously associate vice president for information service at Portland Community College in Oregon. Prior to that, he was responsible for all administrative and academic computing at Clark College in Vancouver, Wash.



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Intelligence

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Getting better with IS

When it absolutely, positively has to be there overnight on time, midsize U.S. manufacturers are calling on information systems to help make it happen. As a result, many midsize manufacturers plan to make substantial capital investments in their order fulfillment and product delivery systems. The moves come in response to stricter requirements from large mass merchandisers and industrial companies.

According to a recent study by Gram Thornton, a consultancy in Houston, a majority of top executives at 250 manufacturing companies surveyed said they will spend at least 10% of their capital budget on one or more logistics and distribution functions in the next two years. Many of those respondents have dedicated sim-

ilar budget resources in the past two years.

Large retailers and manufacturers are placing greater demands on midsize manufacturers for immediate turnaround on orders, to ensure that their customers get products immediately. To comply with this "want it now" mandate, midsize manufacturers are relying more on technology investments to speed up and improve the efficiency of these functions.

Areas of capital investment planned by midsize manufacturers for the next few years include material-handling equipment, 27%; automated data collection systems, 25%; electronic data interchange, 25%; and updates to warehouse information systems, 19%.

Little bang for the buck

The payback on IS investments is still dismal, according to major automotive suppliers. That is the conclusion of a recent survey of chief information officers and IS directors by Deloitte & Touche's

Management Consulting Group in Detroit. The survey participants represented large automotive suppliers with an average \$30 billion in annual sales and more than 150,000 employees at 500 plants.

The respondents said despite making sizable investments in IS, they are still plagued by a failure to communicate. A major culprit: platform inconsistency, which prevents the use of common standards or easy sharing of information.

The survey found a wide range of systems supporting different corporate functions. IBM mainframes largely support administration and finance, mid-range proprietary systems supporting manufacturing, and Unix-based workstations supporting engineering functions and PC LANs network in sales and marketing.

The survey also found that the pressure users need on IS to meet existing business needs is forcing IS to often leap before it looks. In many cases, IS organizations are rapidly building architecture

tures to integrate new technologies, leapfrogging from older to newer technologies that may not be well defined.

The client/server calling

Client/server continues to be the topic on the minds of IS executives, according to a poll of attendees at the Society for Information Management's recent annual conference in Salt Lake City. Attendees were asked to identify the "five most critical topics affecting the IS industry in the next five years."

The top issues identified included client/server and distributed processing; retooling the IS workforce; global and interenterprise information interchange; object-oriented technologies; business process re-engineering; information technology and change; measuring the value of IS; integration of IS with the business; the virtual corporation; multimedia; learning organizations; and speeding up and lowering the cost of applications development.

DEC. 4-10

BGS Systems Users Group Meeting, Orlando, Fla. Dec. 3 — Topics: Visualizing multiple systems, subsystems and networks. BGS process and products for managing distributed Intra systems and real-time management. Contact: BGS Systems, Waltham, Mass. (617) 891-0900.

Developing an Outsourcing Strategy: Balancing Internal vs. External Sourcing, Boston, Dec. 5-6 — Charles Ansley, vice president of IBM's Integrated Systems Solutions Corp., will speak on "The Information Technology Outsourcing Industry — Its Dynamics." Brian Pappas, director of people & payroll, will discuss "Tensions and Transitions: Outsourcing Strategy for the 90s." Contact: Digital Consulting Inc., Andover, Mass. (508) 470-2900.

IT Services '94, The Information Technology Services and Support Conference and Exposition, Santa Clara, Calif., Dec. 5-7 — Contact: Creative Expos and Exhibitions Inc., Bala Cynwyd, Pa. (610) 691-7266.

DB/Exp '94, New York, Dec. 5-6 — Contact: Brian Weinbaum Inc., Fort Lee, N.J. (201) 346-1400.

Wireless Datacom Fall '94 Exposition and Conference, Washington, Dec. 6-8 — Admission: \$450 for a one-day session, \$800 for two days or \$1,050 for three days. Contact: Communications Events Inc., Norwalk, Conn. (203) 947-5131.

Fall Internet World '94, Washington, Dec. 6-9 — James Clark, chairman and chief executive officer at Mosaic Communications Inc., will give the keynote address "The Internet is the Information Highway." Fees: \$445 if registering before Nov. 22; \$480 after Nov. 22. Contact: MediaWorld, San Jose, Calif. (415) 224-6967.

Baltimore & Client/Server World, Chicago, Dec. 7-9 — Conference will run in conjunction with the 56th Annual World Fair, the EDA Solutions Summit, the R2M2 Silver Anniversary Conference and the Executive Client/Server Conference. Contact: Digital Consulting Inc., And-

over, Mass. (617) 470-2900.

The National Center for Database Marketing, Stamford, Conn. Dec. 7-9 — Also being held Dec. 8-9 in Orlando, Fla. Contact: Margaret Laurent-Lewis, National Center for Data Base Marketing, Stamford, Conn. (203) 358-9900.

Network Storage '94, San Jose, Calif., Dec. 8-9 — Contact: Peripheral Strategies I conference Information, Santa Barbara, Calif. (405) 349-3618.

DEC. 11-17

Shaping Government for the 21st Century, Phoenix, Dec. 11-14 — The symposium will focus on how to improve the delivery of public services and explore how ways to respond to the public.

Learning Forward, Topics will include roles of the future. Keynote speaker is Peter Senge, author of *The Fifth Discipline: The Art and Practice of the Learning Organization* and *The Fifth Discipline Fieldbook*, will discuss the importance of organizational learning in ongoing success. Contact: City of Phoenix, Phoenix, Ariz. (602) 252-4714.

Project World Conference & Exposition, Santa Clara, Calif., Dec. 12-16 — There will be 120 conference sessions, including programs by the Tom Pivert Group and Deloitte & Touche for keynote sessions. Featuring the latest discoveries in technology, 114 expert presenters, more than 500 exhibits and highlights the latest in project management philosophy and software. Two-day admission to exhibits and keynotes is \$25. Contact: 1 center for Management Research, Berkeley, Mass. (617) 831-8097.

Learning from the best

Managers who want to learn how award-winning companies achieve success and learn from their mistakes along the way may want to attend the 1994 International Baldrige Conference, sponsored by the International Institute for Learning, Inc.

The conference will be held at the Sheraton New York Hotel & Towers in New York on Dec. 9-9. The theme is "Lessons Learned and Best Practices Gained by Implementing the Baldrige Quality Award Criteria." From World Class Leadership to Customers as Partners."

Conference speakers will include senior executives from this year's Baldrige Award-winning companies

as well as from companies that did not win the award but are benefiting from using the Baldrige process. Among the topics covered will be leadership, benchmarking and empowerment.

Keynote speakers will include Charles W. Smith, vice president of process leadership at Ford Motor Co.; Christopher Carey, president of Datacube Industries; and Phil M. Scanlon, vice president of AT&T Corporate Quality.

For additional information or to register for the conference, call Lori Milhaven or Amy Gershen at the International Institute for Learning in New York at (800) 325-1533 or send a fax to (212) 909-0558.

JAN. 1-6, 1995

Macworld Expo, San Francisco Jan. 1-7 — Contact: Mitch Hill Associates, Dedham, Mass. (617) 391-3401.

JAN. 15-21

First Annual Mobile Communications '95 Conference, Dallas, Jan. 16-18 — The conference will address North American European and Pacific Rim regions, marketing strategies used in those regions, end regulatory and legislative matters aimed at mobile equipment vendors and service providers. Contact: Frost & Sullivan, Inc., Santa Clara, Calif. (408) 256-1975.

1995 Unix Technical on Advanced Computing Systems, New Orleans, Jan. 16-20 — Contact: Systems Association, Berkeley, Calif. (415) 325-9439.


SoftPac '95, San Jose, Calif., Jan. 17-19 — The conference will focus on business and technical issues facing software companies. Sessions include product development, marketing and sales, technical support, customer service, installation or "localization," finance, licensing, packaging and manufacturing. Contact: Mark Crutcher, Expositions, Englewood, Calif. (800) 271-2900.

Mobile Outlook on Communications and Computing, Atlanta, Jan. 18-20 — The focus areas of the three-day conference will include the following: How to integrate mobile systems into a fixed computing environment, how much of what is now in place must change to permit remote access, how and when to make required hardware and software modifications and why do some promising pilot programs succeed while others fail. Contact: David A. Kaminer, Corbett & Pollak, Inc., New York, N.Y. (212) 466-6246.

JAN. 23-FEB. 4

Special Libraries Association 1995 Winter Education Conference: Managing Information Technology, Raleigh, N.C., Jan. 23-31 — Contact: Special Libraries Association, Washington, D.C. (202) 254-4760.

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Re-engineering the Workplace

Special Quarterly Report

While helpful, the new wave of business process re-engineering software could use some redesign of its own

Tool Time

By Joseph Maglitta

R

e-engineering is supposed to start with a clean sheet of paper. Yet anyone who's wrestled with roomfuls of marker-smeared charts or tried to diagram, say, a wild order-entry process using CASE tools knows that business redesign can quickly get very messy.

Derek Miers, a British re-engineering consultant, tells of a chemical giant whose 60-foot diagram of its North American sales process required its own seat

on a jumbo jet. No wonder many frustrated re-engineers are ready to tear out their hair and tear up their process charts. But hang on.

In the past year, a wave of new software aimed at business process re-engineering (BPR) has hit the market. Big names such as IBM,

project, you'd better get a paycheck real quick," he says.

And vendors say their products — bearing names such as BPwin, Business Design Facility and Process IT — are just the ticket for making re-engineering faster and more organized. The approaches and capabilities of products and vendors vary widely but sales pitches are the same: "Don't tolerate — automate."

Want to know, for example, how that credit-card application gets made in your firm? Sit down at your PC, connect some icons and symbols and watch the paper start flying around. You might find your self exclaiming, "Damn, are we screwed up!"

Most products, which typically run on PCs and workstations, cost from \$500 to \$10,000 per seat. High-end packages let you do modeling, analysis, simulation and animation.

Only about 20% of re-engineering efforts use such tools, estimates Delphi Consulting Co. in Boston. But the products are hot. Several ses-

sions on the topic at the Gartner Group, Inc. annual symposium last month drew packed crowds. HIS Strategic Decisions in Norwell, Mass., plans a four-day conference in February on BPR and workflow tools. Various Internet forums are buzzing with requests for information on the topic. Europeans seem especially excited.

Why not? Boosters claim BPR software may provide the long-missing link between information technology and business strategy. Imagine: A new process is mapped, then turned into code. There's no question if the right development job is getting done. Instant alignment.

No wonder a growing number of organizations — including Ford Motor Co., Hoechst International Ltd., Mobil Corp. and many others — have snapped up the products. For many, the tools may offer the first clear view of the complex web of people, processes and technology that make up their organization.

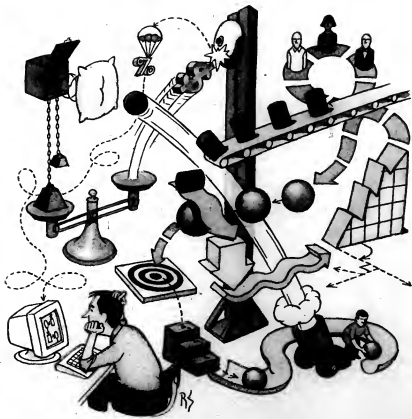
Users say that besides

Texas Instruments, Inc., Xerox Corp., Software AG of North America, Inc., Digital Equipment Corp. and AT&T Global Information Solutions have introduced affordable business mapping, analysis or redesign products.

To have dozens of smaller firms, including Logic Works, Inc. in Princeton, N.J., KnowledgeWare, Inc. in Atlanta

and AdvanEdge Technologies, Inc. in Tuleita, Ore. Moreover, workflow vendors, computer-aided software engineering (CASE) vendors and even artificial intelligence sellers are enhancing their products to grab a share of the \$40 billion that will be spent on re-engineering services this year. The market seems ripe.

"Two years ago, people had the patience and dollars to throw at re-engineering. Now it's getting a bad name," says Timothy R. Purcy, a principal at Oxford Associates, The Bethesda, Md., re-engineering consultancy counts General Electric Co., Johnson & Johnson and IBM among its clients. "If you're going to embark on a re-engineering



A crowded field

Gartner Group says the fast-changing market for business process analysis and simulation tools will continue to evolve quickly over the next year. The groupings of the representative vendors listed below shift almost daily, as new players and factors enter the market.

STRONG EXECUTION

- People Software & Systems, Inc.
- Texas Instruments, Inc.
- Antares Alliance Group
- Gemini Consulting Services, Inc.
- Andersen Consulting

GOOD VISION

- ICL TeamWare, Inc.
- Meta Software Corp.
- Scientific & Engineering Software, Inc.
- LBS&S, Inc.
- GACI Products Co.
- High Performance Systems, Inc.
- Interfacing Technologies Corp.

HOUSE PLAYERS

- Digital Equipment Corp.
- Hewlett-Packard Co.
- Sterling Software, Inc.
- Logic Works, Inc.
- Action Technologies, Inc.
- ViewStar Corp.
- InvalCorp, Inc.
- Various AI, CASE and workflow vendors

Source: Gartner Group, Inc., Stamford, Conn.

clearly illustrating "as is" and "should be" views of processes, BPR tools can help lower the notoriously high rate of re-engineering failures. How? By promoting better communication among team members and sponsors.

"These tools are great for helping people not involved in the process, such as the steering committee, understand what's going on," says David E. Thomas, a process redesign engineer at Nation's Bank Services, Inc. in Charlotte, N.C. When it's time to share results, Thomas simply zips process charts made in Micrograph,

Inc.'s ABC FlowCharter over CC-Mail or imports them into Excel for presentations.

Some products are breathtakingly detailed: Andersen Consulting's object-based mapping tool, for example, provides a multidimensional look at people, processes, products, corporate strategy, core competencies, regulations and information technology. (It's so powerful that Andersen considers it a competitive weapon and restricts its use to company consultants.)

Managers of huge re-engineering efforts need all the Tool time, page 101



Another IBM Client/Server Success.

Warner Bros. Studio Stores are opening about as fast as a...beep beep...*Roadrunner*, and a big part of their business is original artwork, or cels, from Warner Bros. cartoons.

"No two production cels are alike, yet each one has to be available in all of our 100 stores, simultaneously," says Karine Joret, Vice President, Worldwide Marketing.

What Joret needed was a client/server system that could 1) display cels in perfect detail, 2) be easy enough for any user, 3) make it impossible for two customers to order the same cel and 4) integrate smoothly with their existing point-of-sale system.

"We also needed a vendor who really knew retailing and could do the entire job, at our speed. It was IBM."

What IBM created is an OS/2®-based multimedia system with touch-screen PC clients in stores and a server in Burbank, all tied in to a RISC-based network for point-of-sale. IBM wrote the application software and helped build facilities for digitizing images at the Warner Bros. Studios.

"Now," says Joret, "instead of flipping through photocopies, customers browse on a screen, and the instant a cel is bought it's pulled from the system, even as other customers browse in other stores. It's exactly what we asked for."

"As upcoming animated films, such as the *Roadrunner*'s 'Chariots of Fur,' create more demand for our products, our business grows and our needs change. IBM is always right there with us; I can't tell you how helpful that is."

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Special Quarterly Report

CONTINUED FROM PAGE 97

perspective they can get, says Stefan Rollwage. He should know: Rollwage is director of electronic procurement and settlement systems at Public Works and Government Services, Canada's equivalent of the U.S. General Services Administration. His 100-member team is using First Step from Interfacing Technologies Corp. in Montreal to help re-engineer all federal purchasing in Canada. "The ability to zoom from macro view to atomic processes is a big plus," Rollwage says.

And BPR tools are not just for redesign. Advanta Business Services, a Voorhees, N.J.-based unit of Advanta Corp., uses Workflow Manager from Acticon Technologies, Inc. in Alhambra, Calif., to develop a new credit-card processing application in just four months, says Tom Nicolai, director of MIS.

"For a long time, all we had was languages," he says. "We're really keen on development tools that give us an edge." The pilot worked so well that Nicolai plans to use the product to create a new leasing application for 200 users.

Missing links

Despite its strengths, BPR analysis software is hardly a packaged success. Many products are still immature and could pose big headaches for information systems professionals charged with turning hundreds of colorful diagrams into workable code. "These tools are not as useful as people would like them to be," says Delphi Vice President Carl Frappolo.

Even vendors admit that links from diagnostic and charting tools to production tools — such as workflow software, databases and client/server development tools — could stand lots of improvement. Many users agree.

"Once the process piece gets pinned down, you can't necessarily generate code by exporting flow and sucking it into a CASE tool," says James T. LaPointe, director of process re-engineering at Freebuck. "The linkage is relatively weak to date." Not surprisingly, TI, ICL, TeamWare, Inc., Information Builders, Inc., IBM and other sellers of CASE tools offer the strongest — though not ideal — books.

Of course, many "major [user] companies don't want to produce code using a re-engineering tool because they are implementing standard software like SAP, R/3 or C/Inform," says Klaus J. Hagenboeck, a re-engineer at Ciba-Geigy AG.

"But they need to know if the processes, events, functions, organizations and data they have are covered by the standard software."

Arvin Lyon, a senior consultant at Martin Marietta Corp.'s IS division and an expert on BPR tools, says many low-end packages can't handle big, companywide re-engineering efforts. "One of their weakest points is the inability to handle large flows. You need an ability to look at lots of layers."

Moreover, most commercial BPR packages run on a stand-alone workstation, so they cannot be used over networks. That's fine if you have a half-dozen re-engineers locked in a conference room at headquarters. But what if your 200 team members are in Houston, London and Saudi Arabia?

Such reusability is key, says Robert Schtzer, president of Meta Software Corp. in Cambridge, Mass. "People do not buy a one-time application. They view re-engineering as a continuous activity." Like many vendors, Meta is working furiously on partnerships and product books that will permit enterprise use.

What about ABC?

Another possible drawback: Few tools currently being sold provide built-in metrics for Total Quality Management. Ditto for built-in support of Activity Based Costing (ABC), an upcoming accounting technique.

A more basic problem, notes Gartner Group consultant James Bair, is that BPR tools are poorly equipped to map reality. "They are pretty linear and very structured, especially workflow. That is antithetical to continuous change."

Training is also an issue. All but the simplest packaging, notes Gartner Group consultant James Bair, is that BPR tools are poorly equipped to map reality. "They are pretty linear and very structured, especially workflow. That is antithetical to continuous change."

If you do manage to make tools of baggage from DOS applications, and they're not that user-friendly, integration definition method, a popular Air Force-developed standard, gets an especially bad rap here (see story at right).

Re-engineering teams will speed three, four, five months trying to map the process in detail. They'll get tricked, three-dimensional maps, and they'll be very proud. People find a lot of comfort in analysis," Furey says.

Tool time, page 105



Tools, tools, tools

Process Product Watch

An exhaustive, independent research service that road tests BPR and process-oriented tools. Subscribers in 11 countries include Deloitte & Touche, Perot Systems Corp., Olivetti USA and Digital. Produced by Erik Ltd. in Surrey, England. One-year subscription, four reports, \$1,800. Fax: (011-44) 81-940-7424. E-mail mers@eco.uk. Phone: (011-44) 81-332-0210.

Business Process Re-engineering Mailing List

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suess, you name & heavy international flavor brings in diverse views and resources. To subscribe: send E-mail to listserv@bfw.tufts.edu. Type in INFO BPR.1 to obtain user letter.

The Re-engineering Handbook

Raymond L. Manganello, Mark M. Klein. \$29.95. Amacom, New York, N.Y., November 1994. This "step-by-step guide to business transformation" includes a good chapter on BPR tools.

"Systems Re-engineering Economics"

June 1994. Eight-page newsletter focuses on workflow software and data access tools. For more information, call (619) 438-6100.



Options from AdvantEdge Technologies is among dozens of BPR tools reviewed by Process Product Watch

Gartner Group Annual Symposium Several audiocassettes and conference notes from recent conference address BPR tools.

Day 1: BPR Scenario, At Case, Day 2: Workgroups and BPR, Regine Casati, Day 3: Technologies and Methods, At Case, Workflow and BPR, James Bair, Day 5: Methods, techniques and tools, Kelly Simpson. For more information, call (203) 363-7150.

IT Business Process and Workflow

Feb. 18-22, 1995, Orlando, Fla. — Contact: BIS Strategic Designs (800) 974-9800, Ext. 178.

IDEF: Familiar but how friendly?

Depending on who you ask, Integration Definition Method (IDEP) is either the future or the past of business-process mapping. Developed by the U.S. Air Force in the 1970s, IDEF is a structured modeling, analysis and design technique.

Today, IDEF has migrated to banking, manufacturing and service industries. IDEF training and consulting is offered by dozens of consultancies. Numerous vendors, including CACI Products Co., Dynamics Research Corp., Meta Software, Inc. and Popkin Software & Systems, Inc., sell IDEF-compliant products. There's even an active user group. For \$75 a year, corporations can tap into a network of advice, conferences, exhibits and tutorials.

Loyal backers defend IDEF as inexpensive and straightforward. "We use IDEF because [it] has a standard and rigor and is

need internationally," says Seymour Samuels, a spokesman for SRA International, a software vendor in Arlington, Va. And IDEF is easy to teach and learn, adds Christian Knoll, a professor at the German Institut für Fertigungsplanung.

Critics, however, complain that IDEF is too hierarchical, I/O-oriented, nongraphical and hard to use. IDEF's rigor is also its downfall, says Derek Mier, president of Enix Ltd., a consultancy in Surrey, England.

"The rigor gets in the road early on in the BPR process," he says. "Almost without exception, the unstated find it particularly onerous."

Analysts say it's too early to tell how well IDEF will do commercially. "IDEP is a dark horse," says Albert F. Case Jr., vice president of application development strategies at Gartner Group. — Joseph A. Maglione



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Re-engineering the Workplace

Special Quarterly Report

CONTINUED FROM PAGE 105

When that happens, says William Stoddard, managing director of Andersen Consulting's re-engineering practice, companies risk wasting all their time and money "revealing to management how screwed up things are." He and others advise focusing on key processes and using good judgment about how much mapping is enough.

Users and consultants acknowledge that even the best tools used properly won't banish the pressures that scuttle many BPR projects. They might even worsen them by clarifying turf lines.

Ultimately it's hard to tell how useful BPR software will be. Fans agree the products are better than paper. And companies are understandably hesitant to talk about failures, so user reviews may seem overly upbeat. Still, some cultures will always prefer the simplicity and scope of paper diagrams.

Change for the better

During the next six months, the product picture may improve. Numerous vendors say they plan to release new products and major upgrades. Many will employ object technology and support Object Linking and Embedding and Dynamic Data Exchange.

This week, Andersen Consulting plans to unveil an upgrade of its proprietary PC-based software. The Value Driven Re-engineering Workbench will include performance measures such as elapsed time, cycle time, labor time and costs. It targets 40- to 50-member teams.

The Antares Alliance Group, a joint

venture between Amdahl Corp. and Electronic Data Systems Corp., plans to unveil BPR software next year that includes Gateway Consulting's redesign methodology. Oracle Corp. and others are also said to be readying new BPR products. Metasoft is working to develop data repositories for reusable BPR models as part of a \$60 million federal project. AT&T, IBM and Oracle are also part of the effort, which is aimed at creating enterprise-wide workflow management for

health care.

The brightest hope comes from a fast-growing standards body. The Workflow Management Coalition, begun by IBM in Europe and now boasting 100 members, has begun developing specifications for an interface that will link business process models into workflow tools and engines. A working draft was issued Aug. 5. Blair is optimistic. "This could really solve the problem of an enterprise."

Even if that occurs, experienced hands

stress that good people, not software, make or break re-engineering.

"If your team lacks imagination or the bravery and capacity to innovate, then the use of computerized tools will do little more than provide interesting diversions," Miers warns.

Lyons is more blunt. "A fool with a tool," he says, "is just a faster fool."

Maglitta is a *Computerworld* senior editor, Corporate Strategies.



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Tips from the battlewise

Re-engineers, vendors and consultants offer some simple advice for buying and using BPR software:

• Take a good look at links to software development, groupware, databases and other tools. Most products will support only a couple, if any.

• Match the tool to the job and users. Are you doing simple process redesign or full-blown re-engineering? How much power do you need? Can you get by with simple flowcharting or workflow software, or do you need heavy-duty simulation and animation? Will it be used by re-engineering team members, IS people or end users? • Start small. Try a small pilot before you tackle your nightmare process or redesign all 1,400 of your international locations.



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In Depth

AT YOUR SERVICE

COMPU SERVE

by Paul Youngworth



*Got a system problem?
Top CompuServe systems
operators offer tips on
how to get your
problems solved on-line*

My first contact with CompuServe amazed me. I posted a desperate message in the Powersoft Corp. forum after somehow positioning the PowerBuilder tool bar permanently off the screen. In less than an hour, I received two helpful responses and fixed the problem. It doesn't always go that smoothly.

During a critical project in which I was fast approaching a deadline, I ran into a showstopping problem: The program ran fine in the PowerBuilder development environment, but the compiled version didn't perform a validation correctly. I turned to CompuServe in a panic.

I signed on to the Powersoft forum and posted a message with a header that read, "EXE doesn't work." When four days passed without an answer, I tried a different approach. I reposted my message, this time with a more specific header: "Embedded SQL won't compile." In a short time, I received three responses, one of which suggested moving the validation rule to a new part of the program. This solved the problem, and I deployed the application.

CompuServe can be a lifesaver. But there are hundreds of messages a day in some CompuServe forums. What's the difference between a question that gets 10 answers in an hour and a question that never gets answered?

CompuServe, page 110

Youngworth is a programmer/analyst at Schrieffer Foods, Inc. in Green Bay, Wis. He is currently working with Oracle Corp. databases and Powersoft Corp.'s PowerBuilder to design systems for end-user access.

COMPU SERVE AT YOUR SERVICE

CONTINUED FROM PAGE 100

I asked forum experts and systems operators what is likely to make them stop and answer a question. Here are their top tips.

MAKE THE DESCRIPTOR

you put in the subject field sell the question. CompuServe members in a typical forum scroll through hundreds of messages. The first thing they come across is a one-line subject field that includes only a small amount of text. You only have a few words in which to persuade an expert to read the body of your message rather than move on. That's why it's important to be as descriptive and specific as possible in that line.

Putting general words such as "Help," "Problem" or "Bug" in the subject field guarantees that your message will be overlooked, says Frank Hamilton, a member of Team Powersoft, a group of Powersoft experts who volunteer to answer questions in the Powersoft forum. "You'd be surprised how many people post a message to the Datawindow section [of the Powersoft forum] with a subject of 'Datawindow question,'" Hamilton says.

"If the first couple of lines mention topics I don't know anything about, I move on," Carter explains. "On the other hand, a favorite topic will grab my eye, and I will read on no matter what."

He says he sees some messages that contain pages of text, code and debugging traces "with a question hidden somewhere down in the body." His advice is to put two short sentences at the beginning that succinctly state the problem. "The point is to establish the context in the first paragraph," Carter says.

We're building a manufacturing system, and we need to know how to calculate the cost of each unit of material. We need to know how to calculate the cost of each unit of material. We need to know how to calculate the cost of each unit of material.

We want to know how to calculate the cost of each unit of material. We want to know how to calculate the cost of each unit of material. We want to know how to calculate the cost of each unit of material.

PROVIDE ENOUGH DETAIL

A well-designed opening paragraph will encourage experts to read on. However, if you don't provide enough detail, they might have to ask a bunch of questions before they can help. And they may decide it isn't worth the bother.

Unix forum's systems operator David Moskowitz says he wishes he had a clock for every time he has had to answer a question with a question of his own: "What have you tried? How are things configured? I assume you've done X?" Moskowitz says he's attracted to queries with as much detail about the problem as possible. "Tell the forum what you tried and the results," he says.

Powersoft systems operator Joe Mens

agrees. Mens refers to this kind of informative explanation as "isolating the problem to a common denominator."

Let the user explain the problem. Show the full code that runs. Include the error messages you have placed behind the code. Include the code that runs.

It's a good idea to detail your hardware and software configuration if it has a bearing on the problem. For instance, if you're having a problem on only two out of 30 systems, it's best to describe how those two are configured differently.

Be specific about error codes; give the code and error message text. Include brief snippets of code. Carter recommends cutting and pasting in actual code instead of making up an example. "Give us the real code [because] the problem might not be where you think it is," he says.

REPHRASE THE QUESTION and post it again if you don't get the help you need.

If your note has gone several days without a reply, it doesn't necessarily mean no one can help you. If you feel you've been specific in the message header, that your message is detailed and that you've posted it in the right spot, the problem may actually be something out of your control.

Several forum experts say they only read messages that haven't yet received a reply. Because they are usually pressed for time, when they see a message with replies they assume the person has been helped. So they move on.

Therefore, if someone replies to your

message with, "I'm having that problem, too. I hope you get an answer," he may have reduced the chances of an expert reading your note.

Another factor affecting response is the forum's scroll rate. Forums have a fixed capacity for notes, and the lifetime of a message is based on a first-in, first-out order. In a high-activity forum, such as the Powersoft forum, the life of a message can be as short as three days.

It could be that the technical expert who can solve your problem or another user with the same configuration didn't sign on between the time you posted your message and the time it scrolled off the forum.

That's why it's a good idea for you to try sending your message again if you haven't heard anything in several days.

POST YOUR MESSAGE

Let's say you've just purchased Powersoft and are having problems getting it to connect to your Oracle server. You have to find the proper connect string to use in Powersoft and may need to fine-tune parameters in Oracle and the network. This typically involves three separate products: Powersoft, Oracle and your network software.

A good strategy would be to post a message in the database management system section of the Powersoft forum (called "DBMS Connections"), in the connectivity section of the Oracle forum (go to the Oracle User Group forum section called "Networking") and in the appropriate section of the network vendor's forum, for example, the general business section of the Novell, Inc. Developer Information forum.

CompuServe offers access to industry experts, technical consultants and, perhaps best of all, information systems professionals who face the same problems you do. By knowing how to post messages that elicit helpful responses, you'll have this expertise at your beck and call.

BOY, I HATE THAT!

When using CompuServe to troubleshoot system problems, avoid posting your question in all sections of a forum. Several forum experts say they find this practice annoying, and it may actually reduce the chance of getting a response. Powersoft systems operator Joe Mens says multiple postings increase the rate that messages scroll off the forum, and such messages tend to get responses that "range from gentle guidance to outright hostility."



BRIEFLY SUMMARIZE

the problem or question in the first paragraph. You may have passed the first test and got someone to read your note based on your scintillating subject line, but your work isn't done. Forum experts say the most you can expect them to read before deciding whether to move on is about two paragraphs. Breck Carter, a consultant at Toronto-based Visual Systems Development Corp. and a member of Team Powersoft, calls this "cyberspace triage."

HIGHLIGHTS

In this issue, get the latest on special offers and product and service news along with details on Digital business solutions that are right for you.

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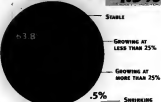
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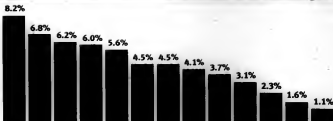
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TURNKEY SOLUTIONS demand TURNKEY WARRANTIES

Securing absolute performance guarantees from systems integrators isn't realistic, but you should expect more than simple pass-through warranties from component vendors

By Steve Sporn

When you hire a plumber to install a sink, you expect it to work. But if it doesn't, does the plumber blame the problem on the sink manufacturer and leave it at that?

Like most professionals who cobble together whole systems from individual components, plumbers guarantee that the parts they choose will work together. So isn't it reasonable to expect the same from a systems integrator?

Hired to create turnkey solutions, a systems integrator's goal is to meet the functional requirements stated in a request for proposals (RFP). Sometimes they reach this goal, and sometimes they don't. But how can a company avoid getting a system that isn't up to snuff? The answer: Go beyond the RFP and review the specific warranties involved before signing the contract.

For example, many systems integrators offer "pass-through" warranties that are originally provided by the hardware and software vendors for the individual components. Because pass-

through warranties are limited to individual products, in nearly every instance they exclude problems caused by combining products.

As you know, individual components may operate as warranted but fail to provide the functionality listed in the RFP. For example, an inventory control system may count units by weight but still not meet a company's needs because it cannot track inventory by additional units of measurement such as cartons and rolls.

In this case, pass-through warranties don't cover the problem because the software functions as warranted by the original vendor. The problem lies not in the software design, but in how it is configured and used. Other times, hardware and software may be poorly matched, failing to provide fast-enough responses to data entry and requests.

A systems integrator is hired expressly to assemble combinations that the original hardware and software vendors exclude from their warranties. That's why it's wise to negotiate an integrated systems warranty.

The purpose of such a warranty is to have each party agree on a reasonable allocation of risk, not to secure an absolute performance guarantee. Each party should be primarily responsible for providing the information it knows best.

The following suggestions will help you get closer to the full-system coverage you want. If nothing else, they will open the dialogue between you and your integrator, letting you learn the limits of your integrator's performance in advance.

Focus the RFP on the results rather than on the means—that's the systems integrator's responsibility.

I've seen 800-page RFPs clearly detail products and features but never mention the desired end result. The choice of hardware, software, network configuration and implementation can be left to the systems integrator. Just be clear about how you want the system to work.

The RFP should come with a two-to-10-page cover statement listing the key system functions required. For example, state whether the system needs to be compatible with existing hardware or software, the data fields and general formats in which information must be organized and presented, how long you can afford to transition to the new system, how you expect to convert your data to the new system and the skill level of the people who will use the new system.

Assemble warranties in a single document.

Ask the systems integrator to put the individual warranties from the hardware and software vendors in a single attachment to your contract. This will help highlight gaps among the various pass-through warranties.

Your contract should also make some reference to the RFP as the standard of performance. Pass-through warranties cover only what the vendor wants to give, not necessarily what you requested or

what the systems integrator promised. By identifying these coverage gaps, you will be prepared to negotiate for the necessary coverage.

Provide for adequate testing and remedies.

A warranty is only as good as the remedy it provides if breached. Therefore, it's important to allow ample opportunity to test the new system before abandoning the old one. For a little leverage, consider withholding part of the payment until the system has proved itself.

In addition, reserve the right to turn to another integrator if your initial choice isn't up to the task. Consider what to do with the system chosen by your initial integrator if your replacement integrator urges you to use different hardware and software.

While most systems integrators won't take back a system, it may be a reasonable request, depending on the circumstances.

Ask for a written warranty.

Asking for a written warranty may cause a systems integrator to carefully review and limit its warranty. While the warranty may not go as far as the handshake agreement or sales promise, it will up you off to any reservations the integrator may have.

It's unlikely that a systems integrator will offer an unconditional guarantee that a software and hardware configuration will meet every need. Moreover, the integrator may be justified in limiting its warranty because of a lack of information.

For example, a systems integrator could reasonably exclude failures that result from incorrect or inadequate information received in the RFP. A negotiated written warranty will get you more of the protection you want and let you know in advance where that protection ends.

Sporn is a Chicago-based lawyer responsible for contract and licensing at a computer and communications technology company.

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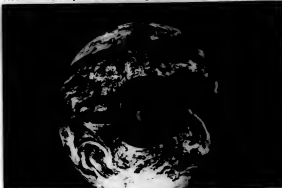


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"To generate sales for Across the Boards, a communications toolkit for developing cooperative applications, and pcMAINFRAME, a generalized micro-to-mainframe file transfer system, cSOFTWARE has been advertising in Computerworld Direct Response Cards almost from the very start. Now, based on our past success, we've also started to advertise pc2POWER, our newest file transfer system. Since all of our products facilitate mainframe-to-micro communication, we need to reach IS managers and technical support professionals on the mainframe side as well as end users on the PC side. That's why Computerworld Direct Response Cards, with their large audience of buyers most apt to need our products, are one of our primary advertising vehicles.

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Stock	Change	Price
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Not a needle in the haystack

State Electronics, Inc. (STAC) is no longer a small player in the data compression market. In the past year, the Carlsbad, Calif., firm has won a patent infringement lawsuit against Microsoft Corp., signed binding deals with IBM and Novell, Inc. and made nice with Microsoft so that the software giant purchased an equity in STAC and agreed to a technology swap deal. Most recently, STAC has purchased remote access software vendor Ocean Isle, Inc. [CNW, Nov. 14].

According to Jonathan Cohen, an analyst at Smith Barney Shearson, Inc. in New York, all of this has placed STAC's Stocker software at the head of the data compression class and offers investors expanding, though speculative, opportunities.

So while the company is playing with the big boys, it is still a small technology issue that may give some investors pause. The purchase of Ocean Isle offers an attractive upside to the stock, however, according to Cohen. "The acquisition is absolutely going to be an additive to earnings and fits in with the company's product line," he said.

Although larger disk drive capacities in new systems may put a dent in the demand for Stocker to some degree, portable users continue to require data compression technology. Cohen pointed out that STAC's technology is platform- and operating system-independent, leaving numerous avenues for growth.

Another positive is the company's move into multimedia with its Multimedia Stocker software, which is targeted at multimedia computers and is optimized for speed, according to a report by Cohen. The product takes advantage of the need to compress huge multimedia files and the growth of the multimedia market.

—Tim Ouellette

Lots to be thankful for

STAC Electronics has made moves during the past year to ensure that growth stack up in the near future.

Revenue	\$31M	\$50M	\$80M
Earnings per share	\$0.41	\$0.51	\$0.59
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*Projections

Nov. 18 Stock Ticker

Stock	12-Month	Nov 18	Nov 17	Nov 16
AT&T	1.1	100.00	100.00	100.00
Boeing	1.5	100.00	100.00	100.00
General Electric	1.5	100.00	100.00	100.00
IBM	1.5	100.00	100.00	100.00
Microsoft	1.5	100.00	100.00	100.00
Oracle	1.5	100.00	100.00	100.00
Qatar Airways	1.5	100.00	100.00	100.00
United Technologies	1.5	100.00	100.00	100.00
Walmart	1.5	100.00	100.00	100.00
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Qatar Airways	1.5	100.00	100.00	100.00
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Oracle	1.5	100.00	100.00	100.00
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Cairo falters again

CONTINUED FROM COVER 1

cept. They cited reduced training costs as a major benefit of getting the new Windows interface on NT sooner.

The advantages of having the same interface on both NT and Windows 95 would be lower training costs and greater availability, according to Warren Smith, a certified public accountant at Peat Marwick Main, San Ramon, Calif. "I think Microsoft would be doing themselves and their users a big service," he said.

"I think Windows 95 is going to move out in the market pretty fast, certainly in larger organizations, [and having the same interface] would make it easier to maintain Windows-based systems," said Dennis Muraw, president of Graphical Bytes, Inc. in Southampton, N.Y.

Many corporate and governmental information systems managers, doing testing and approval, are looking forward to deploying Windows 95 six to 12 months after its ship date, which is currently set for the first half of next year [CW, Nov. 14].

At the same time, many of those same managers are already deploying Windows NT as a workstation operating system for so-called power users and others who need to work in a highly secure environment or run workstation applications.

The problem for those IS managers, once Windows 95 ships, will be training and supporting users on two very different user interfaces. This could be particularly sticky with users who may run Windows 95 on a daily basis but switch to an NT-based workstation periodically to perform other job duties.

"Since training is my most important task, if I have NT on my [geographical information system] stations and all the other machines on Windows 95, it's a problem," said Connie Dillard, a microcomputer specialist for the San Carlos School District in California.

"Other users get used to the Windows 95 in-

terface, it would be difficult for your classic nonpower user to jump between the two interfaces anymore [because] it would be confusing," Moran said.

But Maples disputed the benefits of having the new user interface on NT because about 70 million machines run the Windows 3.1 interface, the same interface NT 3.5 has.

Those users are not going to upgrade overnight, and even though Microsoft would like them to, many of them work on older machines that are not capable of running Windows 95, he noted.

"The determining factor for corporations is not with the user interface but with the existing hardware base," Maples said. Until the older, less-capable hardware is phased out, corporations will be stuck with running, and thus supporting, PCs with the old interface.

Additionally, while many analysts predict that virtually all new PCs will ship with Windows 95 by the time the system has been out for a year, many OEMs initially will ship machines with either Windows 3.1 or Windows 95 and possibly both (see notebook page 16).

A server platform

Many corporations have decided to invest in NT are deploying it only as a server, which makes the user interface a much less important issue. "I doubt that we'll see [NT on the desktop] here any time soon, so I would say it is not necessarily a fallback for Windows 95 because it's so different in terms of its resource consumption," said one IS executive at a large, East Coast, multinational manufacturer.

Still, one influential user who has been hired by Microsoft said the company does have plans to release an interim version of NT with the Windows 95 interface.

But another user said that sword could possibly cut both ways. "If you can have all of the good things that you get with NT, and that would have the best interface to harness that power, you probably want [NT instead of] Windows 95," said Daniel Willis, test analyst at IBM Co.'s Information Technology group in Minneapolis.

Camarro, president of Camarro Research in Fairfield, Conn. They were involved in value add, which shifted to the semiconductor industry," he said.

Technology issues cited

It was not just that modems became a commodity. Hayes was not able to maintain its leadership role technologically. "They had difficulty in sustaining their reputation for a premium product," said James Rafferty, president of Human Communications in Danbury, Conn. The firm found it hard to differentiate themselves from other modem makers.

"They did not really play in the PCMCIA market or get their VSM product out in the right time frame," said Gerry Purdy, editor at "MobileLetter" in Cupertino, Calif.

Just last August, Hayes had reorganized itself into four business units: PC modems, LAN connect, WAN access and system products. This led to a reduction of 40 jobs.

Switched

CONTINUED FROM COVER 1

"ACMS allows network administrators to tap into any call between users strung between several switches, to any workstation," said Roger Dev, director of software development at Cablernet. This will incorporate the functions of Network General Corp. Sniffer-type devices and Remote Network Monitoring (Rmon) probes into a centralized management platform, he said.

This is vital because a true switched virtual network, with no permanent connections between individual nodes or LAN segments, will have no logical place to put a management probe. Calls between end points are set up and torn down on a continual basis and are controlled by software.

No management platform offers these capabilities today. Many vendors offer switches that allow data to be sent from legacy LANs to ATM LANs. Most also offer proprietary software packages to manage either side but not both. "Today you're blind on one side or the other," Dev said. "ACMS will provide end-to-end connection management from [legacy] LANs to ATM."

Ready for prime time?

According to some users, the absence of comprehensive management for switched ATM networks is a main factor holding ATM back from prime time. "There are a lot of proprietary [management] products out there, and when you try and mesh them all together you have a big problem," said David Bering, a telecommunications analyst at Amoco Corp. in Chicago.

Currently, users can monitor switched LANs by putting devices such as a Sniffer or an Rmon probe on each critical LAN segment.

But observers expect switching to be used in networks composed of hundreds of segments, which would make these options impractical to say the least. That is because users would either have to continually sniff Sniffer-like devices around or put an Rmon probe on every segment, which would be very costly and time-intensive.

"There really aren't any tools out there to help manage [switched LANs], which is something that has been dogging this marketplace," said Fred McCallum, principal analyst at Decision Analysts, Inc. in Ashburn, Va.

"In the emerging ATM world, there won't be many probe points [from which to] gather diagnostic information on all your network traffic. ACMS looks like it might provide an answer," said a network manager at a large power

company in the Northeast, who requested anonymity.

In addition to call-tracing and tap-monitoring features, ACMS will provide the following higher-level management functions:

- Automatic setup and tear-down of switch connection tables.
- Route selection or multiple classes of services. Users can set parameters to have ACMS set up the shortest, cheapest connection or the quickest connection for time-sensitive data, for example.
- Traffic management: bandwidth allocation and statistical multiplexing.
- Call accounting for bill-back purposes.

Switching promises

The typical bridged-based network is connectionless, meaning data packets are delivered much like the mail—generally distributed and then sorted by address codes that resemble ZIP codes. This method can require much handling along the way, and errors or lost packets are common. LAN/ATM switched networks are like a telephone switchboard in that they are connection-oriented, meaning that users on a network get dedicated connections to access their wish to communicate with. Because of this, switched networks hold the promise of providing a more efficient, call-effective and cost-effective method of data communication.

ACMS will also provide policy management services that allow administrators to implement access control in virtual networks. For example, when a new manager is hired and added to the network, he will automatically be given the access privileges that correspond to the position.

A way to manage

Texas Instruments plans to be heavily involved in ATM and year for backbone and wide-area applications. But Blair said TI will also begin running ATM to certain desktops using switches and will need a way to manage them. "Every vendor has its own point product now, but a comprehensive method of management is lacking," Blair said.

ACMS will be available as an add-in-board for Cablernet's Multi-media Access Center hubs and has a stand-alone PC-based platform. Cablernet's Spectrum management platform is not required to use ACMS.

ACMS will be managed as an application under Spectrum. It will support Hewlett-Packard Co.'s OpenView, IBM's NetView and Sun Microsystems, Inc.'s SunNet Manager. Pricing was not disclosed.

Senior editor Steve Moore contributed to this article.



Microsoft CEO Bill Gates makes no commitment on an interim NT 3.5

Onetime modem king goes Chapter 11

Price war ends Hayes reign

By Saruchi Mahan and Michael Fitzgerald

Modem maker, untimed technology standard setter and market trailblazer Hayes Microcomputer Products, Inc. last week filed for bankruptcy.

Even in its employees, the news came as a surprise, although analysts said they knew the Atlanta-based company was in trouble. "I didn't think it was this bad [I thought] they would get out of it," said Cheryl Carrell, president of Carrell & Co. in Houston. She said she had expected a merger or acquisition, not Chapter 11 bankruptcy.

But Hayes' situation is indicative of the competition in the modem marketplace, which makes for smaller profit margins and calls for more aggressive leadership in technology.

"They got caught in the price war," said Ken

ysinyg

More fascinating fax

"Alexander Bain, a Scottish clockmaker, patented fax technology in 1842, two years before Samuel Morse patented the telegraph. ... It was only the 1982 decision of several Japanese firms to adopt the CCITT Group III digital fax standard that enabled the technology to explode in the business community."



Source: Robert Bliss, *Cum gratia's Corner, "CrossTalk," U.S. Air Force*

WYSIWYG ILLUSTRATED BY TIM COLELLITE ILLUSTRATIONS BY DAVID MARSHALL

A hacker's Thanksgiving

Are you a fanatic computer hacker who just doesn't have time to go through the niceties of preparing a turkey dinner and sitting down at the table to eat it? Here's a recipe for the hacker gourmet known for his taste in fine holiday foods:

Five-minute pizza

Ingredients: one phone
Dial local pizza delivery, pay delivery person and eat
Source: Gigabytes: *The Hacker Cookbook*, by Jenz Johnson

Don't press THAT key!



Most workers know the frustration of hitting the wrong key and dealing with the resulting confusion with the computer. DataCal Corp. in Chandler, Ariz., hopes to solve this problem by offering custom-made key-caps, keypad overlays and keyboard templates. Workers beware: Now there shouldn't be any excuse for not knowing what key to press!

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Midwest bureau, Des Plaines, Ill.

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Northwest bureau, Bellevue, Wash.

Phone:

(508) 879-0700

(508) 820-8555

(202) 587-0090

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(708) 827-4433

(415) 347-9555

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Inside Lines

Catching 4-pound butterflies

IBM's Butterfly subnotebook was spotted waiting around a book room at Comdex. The sub-4-pound box features a 10.4-in. active-matrix color screen and a keyboard that slides out to give the subnotebook-like machine a full-size keyboard. It will come with a 340MB or 540MB-byte hard drive, a 25/50-MHz Intel 486DX3 processor and built-in telephony features. It will probably cost about \$6,000, sources said. Look for it in late January. IBM officials declined to comment on the unannounced product.

Bad company: Green cards and the GOP

When asked last week about the GOP resurgence in Congress and its potential impact on the high-tech agenda, Philippe Kahn, chairman of Borland International, said, "I'll speak from my heart. The worst part for the industry is what just happened with [California's] Proposition 187. It discourages the immigration of high-tech talent. I was illegal for four years, and I created some stuff. That is my main concern. The rest is fairly irrelevant."

The techno-sexy side of Comdex

Even as the vendors trade the cavernous Las Vegas Convention Center filled the teeming masses at Comdex with tons of glossy technical brochures and publicity materials last week, enterprising purveyors of a different kind of service were working the crowds outside. As visitors staggered from the convention center, several grabbed the material being handed out along the sidewalks. But instead of finding more literature extolling the virtues of new technologies, what they got were some very graphic and descriptive litographs—complete with grainy pictures—of services at some of the seedier fleshpots in this oh-so-classy city.

Three bricks shy of a load

A seldom-seen-oriented version of IBM's AS/400 will hit the streets the day after Thanksgiving, but AS/400 shops might not be thankful for the absence of several key pieces that have been delayed until February. Among the missing is support for a new file-serving processor that is supposed to ease the AS/400's reputation as a LAN server laggard. Users will also have to hide their time before getting a new version of PC connectivity software and a file system that will allow Unix and Windows developers to write AS/400 applications in their native programming modes. IBM tried to put a happy face on it all by noting that 90% of the promised code will ship on schedule, including new database and TCP/IP releases.

Too many people overboard

Re-engineering has taken a bad rap because of poorly implemented projects, according to renowned re-engineering guru Michael Hammer. "It is true that re-engineering sometimes doesn't work, but it is not a high-risk endeavor," he said, speaking somewhat defensively at a Sun satellite broadcast last week. He said many people confuse re-engineering with downsizing, which is when "you throw people out of the boat, and the survivors of the purge have to work twice as hard to pick up the slack of the people who are gone—plus they're demoralized."

The dangers of videoconferencing were embarrassingly—and pointedly—demonstrated in front of a wad Comdex audience last week in Las Vegas. An Intel executive, speaking from his Oregon office, gave a pitch about the power of ISDN-based conferencing. After he finished, Intel CEO Andrew Grove got up to wrap up the session. As the room erupted in laughter, Grove looked up to see his colleague apparently picking his nose on-screen. Bob Metcalfe, a columnist for InfoWorld news paper, finally tipped over to the demonstration machine to minimize the videoconference noisiness. Asked about it later, Metcalfe laughed the hapless executive had only been twirling his mustache. To pass along other such embarrassing stories or just plain old news items and tips, call Computerworld's 24-hour voice-mail tip line at (800) 800-8656 or our toll-free number at (800) 943-6474. News Editor MaryAnn Johnson can be reached by phone at (508) 820-2178, via the Internet at mjohnson@cw.com or through MCJ Mail at 660-8017.

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